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FINAL ENVIRONMENTAL IMPACT REPORT

City of Atwater General Plan Update Final Environmental Impact Report

State Clearinghouse No. 99061027



Prepared for:

City of Atwater
Planning Department
750 Bellevue Road
Atwater, CA 95301

Adopted: July 24, 2000

Prepared by:



CITY OF ATWATER GENERAL PLAN UPDATE FINAL ENVIRONMENTAL IMPACT REPORT

STATE CLEARING HOUSE NO. 99061027

Prepared for:

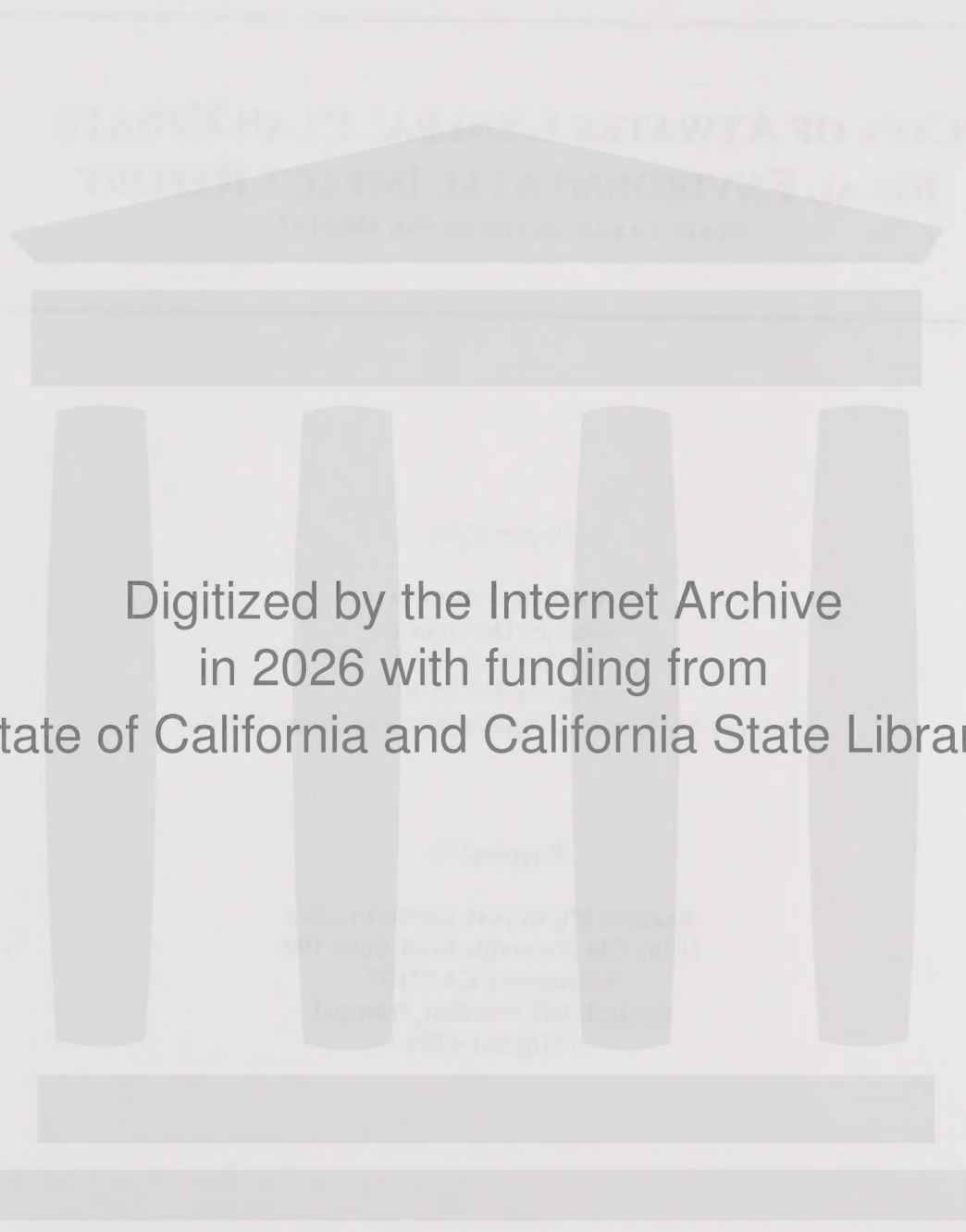
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ADOPTED: JULY 24, 2000



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This section serves as introduction to the proposed General Plan Update and this draft Environmental Impact Report (EIR).

1.1 PROJECT BACKGROUND AND PURPOSE

This draft EIR evaluates the potential environmental effects associated with the implementation of the revised General Plan of the City of Atwater. The City is located in Merced County, approximately eight miles northwest of the City of Merced, which is the county seat. The project is a comprehensive revision and update of the City's General Plan, on which the City will base future decisions concerning land use and development within its jurisdiction. The General Plan will also provide guidance on land uses in areas which are currently outside the jurisdiction of the City, but are also relevant to the City's land use planning.

The City has determined that implementation of the revised General Plan may have significant impacts on the physical environment. Pursuant to the provisions of the California Environmental Quality Act (CEQA), this EIR has been prepared to disclose and analyze the potential environmental impacts of revised General Plan. It also presents measures to mitigate any identified adverse environmental effects, and it evaluates reasonable alternatives to the project. This EIR has been prepared in conformance with CEQA and the state's *Guidelines for Implementation of the California Environmental Quality Act* (the CEQA Guidelines).

OVERVIEW OF THE PLANNING PROCESS

The last significant General Plan update was adopted by the City in 1992. This adoption occurred before the closure of Castle Air Force Base in 1995, which had a serious adverse effect upon the City's population and economy. The City is recovering, due in part to the conversion of the former base to civilian uses. This conversion has been facilitated by a Reuse Plan prepared and adopted by the Castle Joint Powers Authority.

In addition, a new University of California campus north of the City of Merced is scheduled to open in the year 2005. Circulation changes are anticipated as well. The City will be connected to the new campus through construction of a "University Access System", which includes the construction of a four-lane expressway between State Highway 99 and Bellevue Road and accompanying interchange. Another interchange is planned for construction west of the City at the intersection of State Highway 99 and Westside Boulevard.

All of these projects are expected to have a significant influence on future growth and development in the Atwater area. However, the City concluded that the existing General Plan does not anticipate or respond to these events, and deemed it necessary to update the document in its entirety.

As noted above, the 1992 update focused mainly on changes to the Land Use, Circulation and Open Space/Conservation Elements. The Housing Element was updated and adopted in a separate action in 1993. This project proposes a comprehensive update of all the mandatory elements in the City's General Plan, as well as the addition of an Economic Development Element. The update of the City's Housing Element will be prepared under separate cover. In June of 1998, the City initiated the update of the current General Plan with scoping to determine issues of concern in the community. At the same time, data was collected and studies conducted on various aspects of Atwater's physical and socioeconomic environment. This information was compiled in the *Due Diligence Working Paper* (PMC, 1998), a document intended to serve as a resource for the General Plan and associated environmental documentation. The Working Paper is available for public review at the City of Atwater Planning Department. This EIR uses the *Working Paper* as the basis for much of its analyses of environmental issues, and the document is hereby incorporated by reference into this report, pursuant to CEQA Guidelines Section 15150.

As the General Plan process progressed, input from citizens and agencies were solicited to develop a General Plan that reflects the needs and desires of the community. To facilitate this input, visioning workshops were conducted to ascertain ideas about the City's future development. Several land development scenarios were prepared and presented to stimulate ideas and discussion. From this input, a preferred alternative for future land use development was produced, which became the basis for the draft General Plan.

1.2 LEGAL AUTHORITY

In 1970, the California Legislature enacted the California Environmental Quality Act (CEQA). The statutes which constitute CEQA are set forth in the California Public Resources Code, Section 21000 *et seq.* To assist in implementing these statutes, the State of California, through the Governor's Office of Planning and Research, has issued a set of regulations known as the CEQA Guidelines.

Under CEQA, all state and local agencies are required to consider the environmental impacts of any projects requiring their approval. The principal mechanism for such consideration is the EIR. The EIR is primarily a public disclosure and informational document with a number of specific objectives:

- To inform public agency decision-makers and the public of the environmental effects of proposed activities;
- To assist public-agency decision-makers as they consider the environmental implications of their actions;
- To identify ways in which environmental damage can be avoided or significantly reduced;

- To reduce or prevent damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures; and,
- To disclose to the public the reasons why a governmental agency approved a project if significant environmental effects are involved.

CEQA requires the preparation of an EIR prior to the approval of any project which may have a significant effect on the environment. A "project", as defined by CEQA Guidelines Section 15378, refers to the whole of an action, which has a potential to cause a direct physical change or a reasonably foreseeable indirect physical change in the environment, and is one of the following:

- An activity directly undertaken by any public agency, including construction and related activities, improvements to public structures, and actions on zoning ordinances and General Plans.
- An activity supported in whole or in part by forms of assistance from one or more public agencies, such as contracts, grants, subsidies and loans.
- An activity requiring the issuance of an entitlement for use by one or more public agencies, such as permits, leases, licenses or certificates.

With respect to the revised General Plan, the City has determined that future development in accordance with the proposed land use changes constitutes a project within the definition of CEQA. As identified in the Initial Study for this project (pursuant to CEQA Guidelines Section 15063), the potential to result in significant environmental effects.

1.3 TYPE OF DOCUMENT AND INTENDED USE

The type of EIR prepared for this project is a Program EIR. Pursuant to CEQA Guidelines Section 15168, a Program EIR is prepared for a series of related actions that can be characterized as one large project. Examples include general plans, area plans, master development plans and regulatory programs. A program EIR is prepared for a project that contains general parameters or conditions, which will be applied to future activities that require discretionary approval. By contrast, a Project EIR, the most common type of EIR, examines impacts of a specific project that requires "one-time" discretionary approval.

In accordance with CEQA Guidelines Section 15146, the degree of specificity of this EIR corresponds with the degree of specificity involved in the underlying activity. Thus, an EIR for a General Plan is necessarily less detailed, and addresses environmental issues on a broader scale, than an EIR for a specific construction project. This EIR, therefore, shall address impacts on a general

scale. Future projects submitted after adoption of the revised General Plan may be required to undergo a more detailed environmental review, depending on the scope of the project and the characteristics of the site.

This EIR is intended to evaluate the environmental impacts of the implementation of the revised General Plan, including changes to the land use designations and policies. In accordance with CEQA Guidelines Section 15126, this Program EIR may be used as the baseline environmental document to evaluate, at a program level of detail, other planning and permitting actions. These actions may include specific plans, rezoning, tentative maps, grading plans, and related agency permits such as the California Department of Fish and Game streambed alteration permit. Upon adoption of the revised General Plan and certification of this EIR, additional CEQA compliance may be required for any of the previously mentioned actions which take place within the Planning Area. However, this EIR is intended to be used as extensively as possible to evaluate future actions, in order to streamline the environmental review process.

1.4 ORGANIZATION AND SCOPE

CEQA Guidelines Sections 15122 through 15131 describe the required content of draft EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, a reasonable range of feasible alternatives, unavoidable significant environmental effects, significant irreversible environmental changes, growth-inducing impacts, and cumulative environmental impacts. The environmental issues addressed in this EIR were established through the General Plan process, from public agency and citizen responses to the Notice of Preparation, and from the Initial Study conducted for the project (**Appendix A** of this report).

The City of Atwater Comprehensive General Plan Revision EIR is organized as follows:

SECTION 1 - INTRODUCTION

Section 1 provides an introduction to the project. It presents an overview describing the intended uses of the Program EIR, legal basis and CEQA requirements, and a summary of the EIR review and certification process.

SECTION 2 - EXECUTIVE SUMMARY

Section 2 summarizes the project description, provides an overview of project alternatives, and discusses the findings of the environmental analysis. Also included is Table 1-1, which presents the potential environmental impacts of the project and proposed mitigation measures for each impact.

SECTION 3 - PROJECT DESCRIPTION

Section 3 provides a detailed description of the proposed project, including intended objectives, historical perspective, and a description of the proposed land uses under the revised General Plan.

SECTION 4 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Section 4 contains an analysis of specific environmental issues as identified below. Each subsection contains an introduction, a description of the environmental setting, identification of potential impacts and their significance, mitigation measures for significant impacts, and a description of the significance of impacts after mitigation, where applicable.

The following environmental issues shall be addressed in this Section:

- **4.1 Land Use.** Discussion of land use impacts associated with implementation of the revised General Plan, including compatibility between proposed land uses and surrounding land uses, and consistency with other adopted plans and policies that affect the City.
- **4.2 Human Health/Risk of Upset.** Assessment of potential hazards associated with hazardous material storage, use and transportation, including the potential for fires and explosions. Description of existing emergency plans and critical facilities.
- **4.3 Traffic and Circulation.** Evaluation of effects upon the existing roadway system and transportation network, and projection of future conditions, based on information and policies set forth in the proposed Circulation Element.
- **4.4 Noise.** Assessment of existing stationary and mobile noise sources, and evaluation of future noise impacts based upon noise standards set forth in the proposed Noise Element.
- **4.5 Air Quality.** Discussion of existing conditions, current air quality standards and applicable plans. Evaluation of potential impacts on air quality.
- **4.6 Hydrology and Water Quality.** Documentation of existing surface drainage patterns, water tables and groundwater quality, including groundwater contamination at the former Castle Air Force Base site. The potential for flooding is also addressed.
- **4.7 Geology, Soils and Seismicity.** Description of topographic features, soils and mineral resources, and discussion of potential impacts.

- **4.8 Biological Resources.** Inventory of known special status species and sensitive habitats in the Planning Area. Description of regulatory framework governing biological resources and applicability to existing setting.
- **4.9 Cultural Resources.** Inventory of known prehistoric and historic sites, with their general locations and cultural importance.
- **4.10 Public Services and Utilities.** Evaluation of existing and required services such as water treatment and distribution, sewage collection and disposal, storm water drainage, solid waste disposal, fire and police protection, schools, electric power and natural gas distribution, and other community services.

SECTION 5 - PROJECT ALTERNATIVES

CEQA Guidelines Section 15126.6 requires an EIR to describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic project objectives while reducing the degree of any significant environmental impact. Section 5 contains a qualitative analysis of four General Plan land use scenarios:

- **Alternative 1 - No Project.** This alternative discusses what would be reasonably expected to occur in the foreseeable future if the preferred General Plan was not adopted. The basis for the evaluation of this alternative will be the existing General Plan.
- **Alternative 3 - Castle Open Space Alternative.** A combination of Very Low Density Residential and Urban Reserve designations are applied to minimize development densities around the Castle Airport and Aviation Development Center (CAADC) site.
- **Alternative 4 - Merced County Association of Governments (MCAG) Alternative.** This scenario proposes minor land use modifications within the central portion of the Planning Area, based on population projections prepared by MCAG.
- **Alternative 2 - South Atwater Alternative.** This scenario adds a considerable amount of Low and Medium Density Residential land uses within the southern half of the Planning Area in a fairly compact pattern.

SECTION 6 - SUMMARY OF CUMULATIVE IMPACTS

Section 6 provides a summary of cumulative environmental impacts identified in the environmental impact analysis, by environmental issue. Included in the summary is a description of the cumulative impact, the significance of the impact and mitigation measures.

SECTION 7 - LONG TERM IMPACTS OF THE PROJECT

Section 7 contains a discussion of certain types of impacts related to General Plan implementation as required by the CEQA Guidelines. These impacts include significant irreversible environmental changes/commitment of resources, growth inducing and significant unavoidable impacts, which would be involved in the proposed project should it be implemented.

SECTION 8 - EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 8 includes a discussion of environmental issues that are addressed in the initial study for which it was determined that they would not adversely affect the environment.

SECTION 9 - REPORT PREPARERS AND REFERENCES

Section 9 provides a list of all persons and agencies that assisted in the preparation of this document by name, title, and company or agency affiliation. It also itemizes supporting and reference data used in the preparation of this EIR, and it lists all agencies, organizations and individuals consulted.

APPENDICES

This section includes all notices and other procedural documents pertinent to this EIR. All technical reports that were prepared to support the environmental impact technical reports are bound within a separate volume.

1.5 ENVIRONMENTAL REVIEW PROCESS

The review and approval process for the Program EIR and the revised General Plan will involve the following procedural steps:

NOTICE OF PREPARATION (NOP).

The NOP was completed and distributed to the State Clearinghouse on July 18, 1999. The NOP serves as the first invitation for public and agency comment on the EIR process, and input from interested respondents assists in directing the scope of the EIR.

NOTICE OF COMPLETION (NOC).

The City has filed a NOC with the Governor's Office of Planning and Research to begin the required public review period, pursuant to Public Resources Code Section 21161.

PUBLIC NOTICE/PUBLIC REVIEW.

Concurrent with the NOC, the City has provided public notice of the availability of the Draft EIR for public review, inviting comments from the general public, agencies and other interested parties. The public review and comment period for an EIR is no less than 30 days and no greater than 60 days, unless an extension is granted by the City. It is expected that the review period for this EIR will be 45 days, opening on April 7, 2000 and closing on May 22, 2000. Public comment on the Draft EIR will be accepted both in written form and orally at public hearings. Although not required by CEQA, the City expects to hold a public review hearing on the Draft EIR during the review period. Prior to any hearing, notice of the time and location will be published. All comments or questions regarding the EIR should be directed to the following person:

Mo Khatami, Planning and Redevelopment Manager
City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

RESPONSE TO COMMENTS/FINAL EIR.

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments made at any public hearing on the Draft EIR. The Final EIR will be available for public review prior to its consideration for specific approvals by the Planning Commission and by the City Council. The Planning Commission and the City Council will review and consider the Final EIR prior to a decision on the General Plan.

GENERAL PLAN CONSIDERATION.

Upon review and consideration of the Final EIR, the City may act upon the revised General Plan. A decision to approve the General Plan would be accompanied by written findings in accordance with CEQA Guidelines Section 15091, and by a Statement of Overriding Considerations if applicable (CEQA Guidelines Section 15093). The City would also adopt a monitoring or reporting program for mitigation measures that have been incorporated into or imposed upon the General Plan. This program would be designed to ensure that the mitigation measures are carried out during General Plan implementation.

CERTIFICATION OF THE EIR.

If the City finds that the Final EIR is "adequate and complete", then the City may certify the Final EIR. The rule of adequacy generally holds that the EIR may be certified if 1) it shows a good faith effort at full disclosure of environmental information, and 2) it provides sufficient analysis to allow decisions to be made regarding the project in contemplation of environmental considerations.

1.6 CLASSIFICATION OF IMPACTS

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision-makers make findings that significant impacts identified in the Final EIR have been mitigated as completely as feasible. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision-makers to adopt a statement of overriding considerations, which explains why the benefits of the project outweigh the adverse environmental consequences identified by the EIR.

The level of significance for each impact examined in this EIR was determined by considering the predicted magnitude of the impact against a threshold. Thresholds were developed using criteria from the CEQA Guidelines, local/regional plans and ordinances, accepted practice, and/or consultation with recognized experts. The following terms are used to explain the threshold and level of impact:

STANDARDS OF SIGNIFICANCE. A set of criteria used by the lead agency to determine at what level or "threshold" an impact would be considered significant. Significance criteria used in this EIR include the CEQA Guidelines; factual or scientific information; regulatory performance standards of local, state, and federal agencies; and, City goals, objectives, and policies.

- **Less Than Significant Impact.** A less than significant impact would cause no substantial change in the environment (no mitigation required).
- **Significant Impact.** A significant impact would cause (or would potentially cause) a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects using specified standards of significance. Mitigation measures and/or project alternatives are identified to reduce project effects to the environment.
- **Significant Unavoidable Impact.** A significant and unavoidable impact would result in a substantial change in the environment that cannot be avoided or mitigated to a less than significant level if the project is implemented.

- **Cumulative Significant Impact.** A cumulative significant impact would result in a new substantial change in the environment from effects of the project when evaluated in the context of reasonably foreseeable development in the surrounding area.

1.7 MITIGATION MONITORING

CEQA requires that when a public agency makes findings based on an EIR, that agency must adopt a monitoring or reporting plan for the mitigation measures it has adopted or made a condition of project approval (Public Resources Code Section 21081.6). The monitoring or reporting plan would be designed to ensure compliance with these measures during project implementation. It also would provide disclosure to the public that the conditions attached to the project are being monitored and properly met. If this EIR is certified and the revised General Plan is approved, then the mitigation measures contained within the EIR would be part of the required monitoring or reporting program.

The report provides an overview of the company's performance, including financial results, operational performance, and environmental, social, and governance (ESG) performance.

1.1 Executive Summary

The 2017-2018 period was marked by a strong performance across all key areas, with the achievement of the company's strategic goals and the implementation of the 2017-2018 Strategic Plan. The company's financial performance was particularly strong, with a significant increase in revenue and profit.

The company's operational performance was also strong, with a focus on improving efficiency and reducing costs. The company's environmental, social, and governance (ESG) performance was also strong, with a focus on reducing carbon emissions and improving employee satisfaction. The company's financial performance was particularly strong, with a significant increase in revenue and profit.

2.0 EXECUTIVE SUMMARY

The company's performance was strong across all key areas, with the achievement of the company's strategic goals and the implementation of the 2017-2018 Strategic Plan. The company's financial performance was particularly strong, with a significant increase in revenue and profit.

The company's operational performance was also strong, with a focus on improving efficiency and reducing costs. The company's environmental, social, and governance (ESG) performance was also strong, with a focus on reducing carbon emissions and improving employee satisfaction.

2.1 Financial Performance

The company's financial performance was strong across all key areas, with the achievement of the company's strategic goals and the implementation of the 2017-2018 Strategic Plan. The company's financial performance was particularly strong, with a significant increase in revenue and profit. The company's operational performance was also strong, with a focus on improving efficiency and reducing costs. The company's environmental, social, and governance (ESG) performance was also strong, with a focus on reducing carbon emissions and improving employee satisfaction.

This section provides an overview of the project and the environmental analysis. For more information, refer to Section 4.0, Environmental Setting, Impacts and Mitigation.

2.1 PURPOSE AND SCOPE OF THE EIR

The EIR provides an analysis of the potential environmental effects associated with the implementation of the proposed City of Atwater General Plan Update, which represents a comprehensive revision of the Atwater General Plan 1992-2012 and subsequently adopted elements.

In terms of the environmental review, this EIR has evaluated the goals, policies and actions of the proposed General Plan revision. By preparing the EIR at this stage of General Plan development, the City has the opportunity to further consider environmental implications within the General Plan. As such, specific mitigation strategies identified through this process may be incorporated as policy directives prior to finalization and adoption of the General Plan. The result of this parallel process will be a General Plan document which is consistent or has considered fully all of the environmental findings.

The EIR prepared for the proposed General Plan revision is a "Program" EIR. A Program EIR is prepared for a series of related actions that can be characterized as one large project, such as a General Plan, area plan, master development plan or regulatory process. Upon approval of the Proposed General Plan revision and certification of this EIR, additional CEQA compliance including negative declarations, mitigated negative declarations, or the preparation of project level EIRs may be required for future projects or other actions which take place within the project area. This EIR, however, should be used as extensively as possible to evaluate future actions in order to streamline the environmental review process.

The EIR analysis focuses upon potential impacts arising from maximum build-out of the proposed land use designation change areas. The EIR adopts this approach in order to provide a conservative analysis based upon the credible worst-case scenario.

2.2 PROJECT CHARACTERISTICS

The preferred land use alternative (Land Use Diagram) under evaluation within this EIR recognizes the agricultural importance of Merced County because of its contribution to the economy and character of the region, and reflects the City's support by preserving agricultural land outside of the City's proposed Sphere of Influence. The Land Use Map also recognizes the need for orderly growth patterns, given the reuse of the Castle Airport and Aviation Development Center (CAADC) and development of a new University of California campus just north of the city of Merced. As a result, four focused areas are being considered for land use designation changes which differ from the existing General Plan. In addition, four individual land use designations are proposed, and the CAADC site has been renamed from Castle Specific Plan Area. Altogether, the Land Use Diagram

allows for a decrease in Very Low Residential land by 5,571.05 acres, and a respective gain in Medium and High Density Residential of 89.5 and 3.8 acres. The Commercial and Business Park designations gained 320.5 and 308.5 acres, respectively, while lands designated Manufacturing were reduced by 24.65 acres. Finally, land designated Park was reduced by 27.85 acres, and Institutional was reduced by 2.5 acres. The school designation gained 3.3 acres.

SOUTHWEST ATWATER

Southwest Atwater consists of a tract of land located south of SR 99 and the City's existing corporate limits and sphere, west of the community of McSwain, east of Bert Crane Road and north of Highway 140. Long-term future development in this area is likely to take on a predominantly residential character, although agreements will be encouraged between the City and County of Merced to ensure that some separation is maintained between Atwater and the community of McSwain.

Southwest Atwater Specific Plan Areas

In order to more specifically evaluate the timing and desired character of development within Southwest Atwater, three Specific Plan areas have been identified on the Land Use Diagram. Specific Plan Areas 1, 2, and 3 contain 622, 1,140, and 1,029 acres, respectively. The combined acreage of all three areas is 2,791 acres.

Much of the land within these areas that is not already devoted to urban land uses has been designated as Urban Reserve on the Land Use Diagram. More specific land use designations will be applied in conjunction with the preparation of individual specific plans. The City anticipates that each Specific Plan area will incorporate a village concept. However, the character and mix of land uses may vary from one Specific Plan area to another depending upon the central focus and character of the village.

Buildout of all three Specific Plan areas could accommodate a population of approximately 20,298 persons. These figures are based upon gross acreage. Actual development could be between 15 and 20 percent less when land dedicated to infrastructure is considered. Buildout of all three Specific Plan areas is not expected to occur within the 20 year time frame associated with this General Plan.

CAADC FRINGE

The CAADC Fringe area includes lands surrounding the Castle Airport and Aviation Development Center. Successful reuse of the CAADC site is expected to create demand for additional business park development, rather than residential or some other more sensitive land use, because of the noise and compatibility concerns associated with continued use of the Airport.

The CAADC site has a Reuse Plan and Land Use Plan Map that has been incorporated into the City's General Plan by reference. However, the existing General Plan does not designate the land uses for some of the lands surrounding the site. Under the Preferred Alternative, most of the land surrounding CAADC would be placed in a new designation, "Urban Reserve/Business Park." Under this designation, lands currently under the Merced County agricultural designation would remain agricultural until development demands warrant a transition to business park uses.

Land west of CAADC would be designated for business park activities. Unlike the urban reserve/business park area, this land would not be held in a prior agricultural designation. A small portion of land adjacent to the CAADC site, north of Ladino Road, would be designated urban reserve. Merced County land use designations would apply in this area until such time as the City's primary growth areas approach build out.

CASTLE PARKWAY

Under the Preferred Alternative, the eastern Planning Area boundary would be moved to SR 59. One reason for the move is to place the Castle Parkway corridor within the Planning Area. Castle Parkway is a proposed four-lane expressway between SR 99 and Santa Fe Drive that would be constructed approximately one-quarter mile west of Gurr Road. Land on both sides of the Parkway corridor would be designated for commercial uses, except near Santa Fe Drive where business park uses would be allowed. Medium density residential development would be permitted west of Castle Parkway, beyond the land designated for commercial use.

Land would be designated for low density residential development along Gurr Road, while most of the land between Gurr and Franklin Roads would be designated for very low density residential development. Beyond Franklin Road, to the north and east, land would be placed under the urban reserve designation.

WESTSIDE

In anticipation of a freeway interchange that is planned for construction at State Highway 99 and Westside Boulevard, the City has extended the Planning Area for the Preferred Alternative westward to Stein Road. The Preferred Alternative designates land north of and adjacent to Highway 99, from the current City limits to the proposed interchange, for commercial uses. South of Highway 99 and east of Grove Road, land is designated for business park activities. Another business park area is designated between Vine Road and Orchard Park Road, north of Highway 99. Further north of this area, east of Grove Road, most of the land is designated very low density residential, with small areas designated as park and school sites. West of Grove Road, most of the area is designated Agricultural Area of Interest.

NEW GENERAL PLAN DESIGNATIONS

The Preferred Alternative contains three land use designations that are not found in the existing General Plan:

- **Urban Reserve (UR)** - This designation has been applied to areas within the City of Atwater's proposed (2000) sphere of influence to indicate locations which may be suitable for urban development in the future. Current Merced County agricultural designations and permitted uses will apply in these areas until such time as the City's primary and secondary growth areas approach build out.
- **Urban Reserve / Business Park (UR/BP)** - This designation has been applied to areas surrounding the CAADC site that are intended to remain at current Merced County agricultural designations until development demands warrant future transition to Business Park uses.
- **Agriculture/Area of Interest (AG)** - This designation has been applied both inside and outside of the City's proposed (2000) Sphere of Influence to indicate those locations where current agricultural and open space land uses are to be maintained in areas surrounding the City. Application of the term "Area of Interest" is intended to lay the groundwork for long-term agreements with the City and County of Merced relative to the maintenance of distinct boundaries and buffers between the City of Atwater, City of Merced, Community of Winton, McSwain and Franklin-Beachwood.
- **Downtown Residential Transition (Mixed Use)** - This designation is for areas in downtown Atwater where commercial and residential "mixed use" development will be encouraged. In general, this designation would be applied to the area bounded by Winton Way, Atwater Boulevard, First Street and Drakeley Avenue. The area approximately bounded by Atwater Boulevard, First Street, Broadway and Shaffer Road would also receive this designation.

2.3 PROJECT ALTERNATIVES

CEQA Sec.15126(d) requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and reduce the degree of environmental impact. The Alternatives discussion contains a qualitative analysis of the two following scenarios:

- ALTERNATIVE 1 - NO PROJECT. This alternative discusses what would be reasonably expected to occur in the foreseeable future if the preferred General Plan was not adopted. The basis for the evaluation of this alternative will be the existing General Plan.
- ALTERNATIVE 2 - SOUTH ATWATER ALTERNATIVE. This scenario adds considerable amount of Low and Medium density residential land uses within the southern half of the Planning Area in a fairly compact pattern.
- ALTERNATIVE 3 - CASTLE OPEN SPACE ALTERNATIVE. A combination of Very Low Density Residential and Urban Reserve designations are applied to minimize development densities around the Castle Airport and Aviation Development Center (CAADC) site.
- ALTERNATIVE 4 - MERCED COUNTY ASSOCIATION OF GOVERNMENTS (MCAG) ALTERNATIVE. This scenario proposes minor land use modifications within the central portion of the Planning Area, based on population projections prepared by MCAG.

2.4 AREAS OF CONTROVERSY

Through the public scoping process and Notice of Preparation, the following areas of potential controversy were identified:

- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use Planning
- Noise
- Population and Housing
- Public Services
- Transportation
- Utilities and Service Systems.

TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
<i>4.1 Land Use</i>			
Impact 4.1-1: The Draft Plan allows for development that has the potential to disrupt the existing physical arrangement of land use by allowing for subsequent industrial, commercial, and residential development that is not contiguous with existing urbanized areas, which would disrupt existing rural communities. These potential land use change are considered to present a significant impact to the existing and surrounding land use condition.	SI	General Plan Provisions: LU-1, LU-1.1, LU 1.2, LU-1.b, LU-1.c, LU-2, LU 2.1, LU 2.2, LU-2.a, LU-2.b, LU-4, LU-4.1, LU-4.a, LU-4.b, LU-4.c, LU-5, LU-5.1, LU-5.a, LU-5.b, LU-5.c, LU-10, LU-10.1, LU-10.2, LU-10.3, LU 10.a, LU-11, LU-11.1, LU-11.2, LU-11.3, LU-12, LU-12.1, LU-12.a, LU-13, LU-13.1, LU-13.a, LU-14, LU-14.1, LU-14.2, LU 14.a, LU-15, LU-15.1, LU-15.2, LU-15.a, and LU-15.b. MM 4.1-1a: Concurrent with project application submittals, the City shall ensure that such proposals are evaluated for potential project impacts upon surrounding development patterns and land uses, and that such projects are consistent with the General Plan.	LS
Impact 4.1-2: The Draft Plan allows for development that has the potential to conflict with existing land uses or cause a substantial adverse change in the types or intensity of existing land use patterns. This land use change is considered a significant impact to the existing and surrounding land uses.	SI	General Plan Provisions: CO-10, CO-10.1, CO-10.2, CO-10.a, LU-9, LU-9, LU-9.2, LU-15, LU-15.1, LU-15.2, LU-15.a, and LU-15.b.	LS
Impact 4.1-3: The proposed General Plan revision allows for development that may conflict with existing agricultural operations. This is a potentially significant impact.	SI	General Plan Provisions: LU-13, LU-13.1, LU-13.a, LU-14, LU 14.1, LU 14.2, LU 14.a, CO-4, CO-4.1 and CO-4.a . MM 4.1-3a: Where potential conflict exists, tentative map project applicants shall be conditioned to provide the following disclosure statement to future project residents prior to purchase of homes: "If your property is adjacent to property used for agricultural operations, you may be subject to inconveniences or discomforts from such operations on a 24-hour basis. Discomforts may include,	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		but shall not be limited to, noise, odors from manure or chemicals, and dust or smoke.”	
Impact 4.1-4: The proposed General Plan revision has the potential to allow the conversion of agricultural land to non-agricultural uses. This land use change is considered a significant unavoidable impact that cannot be fully mitigated.	SU	General Plan Provisions: LU-6, LU-6.1, LU-6.a, LU-9, LU-9.1, LU-9.2, LU-9.a, LU-10, LU-10.2, LU-10.3, LU-10.a LU-13, LU-13.1, and LU-13.a.	SU
<i>4.2 Human Health/Risk of Upset</i>			
Impact 4.2-1: Implementation of the proposed General Plan Update may expose people or property to existing hazardous materials. This is considered a significant impact.	SI	General Plan Provisions: SF-9, SF-9.2, and SF-9.3. MM 4.2-1a: An inspection by a qualified environmental professional shall be required for all development applications within the Planning Area to determine the presence of contamination and appropriate mitigation. If substances are detected at concentrations that could present a health risk, remediation of the affected areas shall be undertaken in accordance with the requirements of the Merced County Environmental Health Department, California Department of Toxic Substances Control and the Regional Water Quality Control Board.	
Impact 4.2-2 Implementation of the proposed General Plan Update may include land uses that involve the generation, transportation or storage of hazardous materials. This is considered a potentially significant impact.	SI	General Plan Provisions: SF-9, SF-9.1, SF-9.2, SF-9.3, SF-9.a and SF-9.b.	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
<i>4.3 Traffic and Circulation</i>			
Impact 4.3-1: Implementation of the proposed General Plan Update would result in numerous state, regional and local roadway segments to operate at an unacceptable level of service by 2020. This is considered a significant impact.	SI	General Plan Provisions: CIRC-1, CIRC-1.1, CIRC-1.2, CIRC-1.3, CIRC-1.a, CIRC-2, CIRC-2.1, CIRC-2.2, CIRC-3, CIRC-3.1, CIRC-3.2, CIRC-4.1, CIRC-4.2, SF-12.2 and SF-12.a. MM 4.3-1a: Individual project applicants shall be required to contribute their fair share to the construction of local roadway improvements as shown in Table 4.3-5 of this report.	LS
Impact 4.3-2: Implementation of the proposed General Plan Update may result in conflicts with respect to access, safety, and level of service for those roadways immediately surrounding the CAADC airport. This presents a significant impact with regard to the airport.	SI	General Plan Provisions: SF-8.1 and SF-8.a.	LS
Impact 4.3-3: Implementation of the proposed General Plan Update may generate traffic that would interfere with emergency access and evacuation. This is considered a significant impact.		General Plan Provisions: SF-10, SF-10.1, SF-10.2, SF-10.a, SF-12, SF-12.1, CIRC-7, CIRC-7.1, CIRC-7.a, and CIRC-7.b.	
<i>4.4 Noise</i>			
Impact 4.4-1: The potential exists for noise levels at existing and future noise-sensitive land uses to exceed acceptable noise exposures as defined by the General Plan. This is considered a significant impact.		General Plan Provisions: NO-1, NO-1.1, NO1.2, NO 1.3, NO-1.a, NO-1.b NO-2, NO-2.1, NO-2.2, NO- 2.3, NO 2.4, NO 2.5, NO-3 and NO-4, Policies NO 3.1, NO-4.1, NO-4.a, SF-8 and NO-8.1. The following mitigation is offered to further reduce noise impacts: MM 4.4-1a: Consistent with General Plan policies, noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the	

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		characteristics of the noise source, but is generally 4 to 6 dB per doubling of distance from the source. Setbacks, if utilized as mitigation, shall be identified by the project applicant within subsequent development proposals. MM 4.4-1b Consistent with General Plan policies, noise exposure may be reduced by placing walls, berms, or other structures such as buildings, as shielding between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver.	
<i>4.5 Air Quality</i>			
Impact 4.5.1 The proposed project would generate PM ₁₀ emissions during grading and site preparation activities. PM ₁₀ generated during these activities would exceed significance thresholds. This would be a significant impact.	SI	General Plan Provisions: CO-3, CO-3.1, CO-3.a, CO-3.c, SF-7, SF-7.1, SF-7.2, and SF-7.a. MM 4.5-1a: The following mitigation measures are designed to minimize fugitive dust during grading and construction activities of development projects. • All active portions of construction sites, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used. • All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour. • All material transported off site shall be either sufficiently	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		watered or securely covered to prevent excessive amounts of dust. • The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass is evident. • Construction site vehicle speeds shall be limited to 15 miles per hour. • If used, petroleum-based dust pallitives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials. • Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated from construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping. • All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications. • During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time. • When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines. • Construction activities shall minimize obstruction of through	

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways.	
Impact 4.5.2: Operation of the proposed project would generate both mobile source and area source criteria air pollutants and would increase total criteria air pollutant emissions in the region. Therefore, this impact is considered significant.	SU	General Plan Provisions: CO-3.3 and CO-3.b. MM 4.5-2a: The following mitigation measures are designed to minimize fugitive dust during grading and construction activities of development projects. • The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions at the power plant. • Less polluting alternatives to wood stoves shall be required, in accordance to Rule 4901, where feasible, e.g. CEC certified natural gas fireplace appliances which are 70% efficient and create far less pollution than wood stoves. • Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits. • Design guidelines for Project developments shall consider innovative solutions to encourage transit ridership and other alternative transportation modes. • Ingress and egress points in new development shall be designed to minimize idling vehicle emissions. • Use of alternative fuel vehicles shall be encouraged in vehicle fleets and new facilities shall be designed to set aside space for refueling or electrical recharging of vehicles. • The City shall promote the use of signal synchronization, one-way streets, computerized traffic controls, removal of	SU

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		unnecessary signals, and other engineering techniques to decrease idling time and maximize the speed of traffic on congested surface streets. • Implementation of planned street and highway, transit, and bikeway improvements necessary to relieve congestion and reduce idlings. • Conformance with provisions contained in the Merced County Congestion Management Program (CMP). • Encourage additional wall and attic insulation beyond existing building code (Title 24) requirements for all commercial/residential developments. • Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all commercial/residential developments. • Review the orientation of residences to insure reductions in energy use. • Use of HVAC equipment with a SEER of 12 or greater. • Conversion of one or more public service vehicles from gasoline or diesel to compressed natural gas (CNG), or electric powered. Examples include city or county owned vehicles, U.S. Postal Services vehicles, and school buses. • Allow for the retirement of pre-1974 vehicles to offset the emissions from the Project.	

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		Implement the SJVUAPCD's Regulation VIII - Fugitive Dust/PM10 Synopsis also may be applied. The purpose of Regulation VIII is to reduce the amount of injected into the ambient air from man-made sources.	
4.6 Geology and Soils			
Impact 4.6-1: Implementation of the proposed General Plan would alter existing drainage patterns and increase existing surface water runoff. This is considered to be a significant impact.	SI	General Plan Provisions: LU-24, LU-24.1, LU 24.a, LU-25, LU-25.1, and LU-25.a. MM 4.6-1a: Until such time that the Master Storm Plan is developed, individual project applicants shall demonstrate that either storm drainage infrastructure is available to serve the project, or that the project includes adequate storm drainage.	LS
Impact 4.6-2: Implementation of the proposed General Plan Update may expose people to flood hazards. This is considered a significant impact.		General Plan Provisions: SF-4, SF-4.1, SF-4.a, SF-4.b and SF-4.c.	LS
Impact 4.6-3: Implementation of the proposed General Plan Update could result in the degradation of surface and groundwater quality from a number of sources. This is a potentially significant impact.		CO-1, CO-1.1, CO-1.2, CO1.a, CO-2, CO-2.1, CO-2.2, and CO-2.a. MM4.6-3a: Prior to issuance of a grading permit, the project applicant shall submit to the Regional Water Quality Control Board and the Atwater Planning Department, for review and approval, an erosion control plan which indicates proper control of siltation, sedimentation, and other pollutants to be implemented per NPDES permit requirements. The plan shall address storm drainage during construction and proposed Best Management Practices (BMPs) to reduce erosion and water quality degradation. All on-site drainage facilities shall be constructed City standards. BMPs shall be implemented throughout the construction process. The following BMPs will be implemented as necessary:	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
		• Soil Stabilization Practices (straw mulching, hydromulching, jute netting, revegetation, preservation of existing vegetation). • Sediment Barriers (straw bale barriers, straw bale drop inlet barriers, filter fences). • Site Construction Practices (winterization, traffic control, dust control). • Runoff Control in Slopes/Streets (diversion dikes, diversion swales, sediment trap).	
<i>4.7 Water Quality and Surface Hydrology</i>			
Impact 4.7-1: Implementation of the proposed General Plan revision may expose people to hazards associated with seismic events. This is considered a significant impact.	SI	General Plan Provisions: SF-1, SF-1.1, SF-2, SF-2.1, and SF-3.a.	LS
Impact 4.7-2: Implementation of the proposed General Plan revision may expose people to geologic hazards associated with subsidence. This is considered a significant impact.	SI	General Plan Provisions: SF-3, SF-3.1, and SF-3.a.	LS
Impact 4.7-3: Construction activities associated with implementation of the General Plan Update will expose soils to erosion from wind and water. This is considered a significant impact.	SI	General Plan Provisions: SF-1, SF-1.1, SF-2, SF-2.1, and SF-3.a.	LS
<i>4.8 Biological Resources</i>			
Impact 4.8-1: Implementation of the proposed General Plan Update has the potential to disturb sensitive species and habitat. This is considered a significant impact.	SI	General Plan Provisions: CO-6, CO-6.1, CO-6.2 and CO-6.2a.	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
Impact 4.8-2: Implementation of the proposed General Plan update has the potential to disturb wetlands and/or other sensitive habitat. This is considered a significant impact.	SI	General Plan Provisions: CO-5, CO-5.1 CO-5.a, CO-9, CO-9.1, CO-9.2, CO-9.3 and CO-9.a MM 4.8-2a: Subsequent project applicants proposing development in the areas identified by the discussion for Impact 4.8-2 of this EIR shall conduct a wetlands determination study in consultation with the NRCS to determine jurisdictional status of potentially impacted areas. MM 4.8-2b: If these features are determined to be Jurisdictional Waters of the U.S. then the wetland delineation map for the project shall be submitted to the Corps. The Corps will make a determination on the appropriate permit that would be required for placement of fill. Based on the amount of area that would be impacted, it is anticipated that a Nationwide Permit 26, will be sufficient. Upon verification of the delineation, a detailed wetland delineation report and wetland mitigation and creation plan will be prepared for submittal to the Corps and City of Tracy as part of the permit package. Any wetlands that would be lost or disturbed shall be replaced or rehabilitated on a "no net loss" basis in accordance with the Corps mitigation guidelines. Habitat restoration, rehabilitation, retention, and/or replacement shall be at a location and by methods agreeable to the Corps.	LS
<i>4.9 Cultural Resources</i>			
Impact 4.9.1 Artifacts, objects and locations associated with an event or person of California or American history or prehistory which constitute resources of importance under CEQA and are eligible for the California Register or National	SI	MM 4.9-1a Individual applicants for subsequent development projects shall retain the services of a qualified archaeologist to determine the presence and extent of any historic, archaeological or paleontological resources. The recommendations of those studies shall be incorporated into development plans.	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
Register may exist within the project site. Destruction or disturbance of such undiscovered resources, whether planned or inadvertent, constitutes a potentially significant impact.		MM 4.9.1b If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 7050.5 of California's Health and Safety Code. If the remains are Native American, the coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains and any grave goods.	
<i>4.10 Community Services</i>			
Impact 4.10.1: Buildout of the proposed General Plan would require expansion of existing water distribution systems. This is considered a significant impact.	SI	General Plan Provisions: LU-24, LU-24.1, LU-24.a, LU-25, LU-25.1 and LU-25.a. MM 4.10-1a: Prior to development of a Master Water Plan, individual applicants shall conduct a water study to determine the availability of potable water and the infrastructure required for conveyance. MM 4.10.1b Residences, businesses and community facilities shall be designed with water conserving devices, such as low-flow shower-heads, drought tolerant landscaping, and low-flow toilets.	LS
Impact 4.10-2: Implementation of the proposed General Plan would required the development of additional wastewater conveyance and treatment facilities. This is considered a significant impact.	SI	General Plan Provisions: LU-24, LU-24.1, LU-24.a, LU-25, LU-25.1 and LU-25.a. MM 4.10-2a: Until such time that a Master Plan is developed, individual project applicants shall demonstrate available wastewater treatment capacity to serve new development.	LS
Impact 4.10.3: Implementation of the proposed General Plan Update would increase the demand for police protection services and facilities. This is considered to be a significant impact.	SI	General Plan Provisions: LU-18, LU-18.1, LU-18., LU-18.4, LU-18.4, LU-18.5 and LU-18.a.	LS

2.0 EXECUTIVE SUMMARY

Impact	Level of Significance without Mitigation	Mitigation Measures	Resulting Level of Significance
Impact 4.10-4: Implementation of the proposed General Plan Update would require the provision of additional fire staff and services. This is considered a significant impact.	SI	General Plan Provisions: LU-17, LU-17.1, LU-17.2, LU-17.a, LU-17.b and LU-17.c.	LS
Impact 4.10-5: Implementation of the proposed General Plan Update would require additional school staffing and the construction of additional school facilities. This is considered a significant impact.	SI	General Plan Provisions: LU-20, LU-20.1, LU-20.a, LU-20.b, LU-21, LU-21.1, LU-21.2, LU-21.3, LU-21a, and LU-21.b.	LS
Impact 4.10-6: Buildout of the proposed General Plan would result in an increase in demand necessitating the expansion of utility services. This is considered to be a potentially significant impact.	SI	MM 4.10-6: Future project applicants shall coordinate with PG&E and Pacific Bell regarding the proper extension of electrical, natural gas and telephone services to the individual project sites. This shall include the development of detailed plans for utility placement and the project's participation in residential energy conservation programs provided by PG&E as applicable. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with PG&E and Pacific Bell shall be provided to the City of Atwater Planning and Public Works Departments.	LS
Impact 4.10-7: Implementation of the proposed General Plan Update would create demands for general public services in excess of the City's ability to provide those services. This is considered a significant impact.		General Plan Provisions: LU-19, LU-19.1, LU-19.a, LU-22 and LU-22.1.	LS

LS = Less Than Significant

SI = Significant Impact

SU = Significant and Unavoidable Impact

3.0 PROJECT DESCRIPTION

This section describes the proposed General Plan Update in detail.

3.1 PROJECT OBJECTIVES

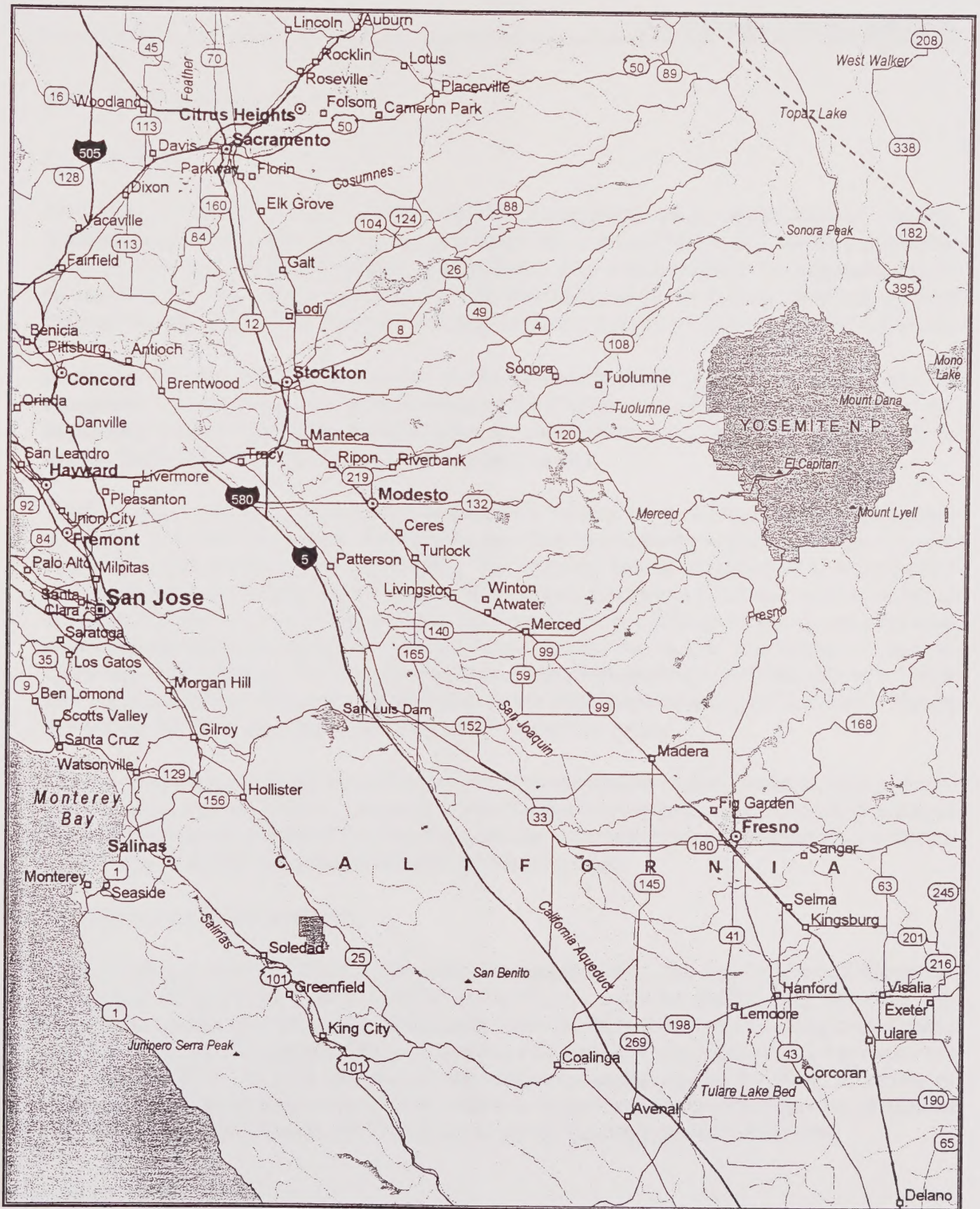
The City of Atwater began its General Plan update process in June of 1998, to produce a General Plan that addresses a variety of issues of importance to the Atwater community. As part of this process, the City has engaged in community workshops and other forms of community outreach to ascertain the desires and concerns of its citizens about the future of the Atwater area. The result is a General Plan that provides a flexible blueprint that will be used to guide the physical development of the City for the next twenty years.

The preparation, adoption and implementation of a general plan serves the following purposes:

- To guide and coordinate the actual development of the community;
- To define the community's environmental, economic and social goals;
- To provide citizens with information about their community and to offer them opportunities to participate in the planning process;
- To provide a forum for resolving conflicts among competing interests and values; and
- To facilitate coordination of community and environmental protection activities among local, regional, state and federal agencies.

3.2 REGIONAL SETTING

The City of Atwater is located in central California, within the region known as the San Joaquin Valley. It is approximately 95 miles southeast of the City of Sacramento and approximately 60 miles northwest of the City of Fresno. State Highway 99, one of the two principal north-south transportation corridors in the San Joaquin Valley, is located adjacent to the City. Atwater is located within Merced County, approximately eight miles northwest of the City of Merced, the county seat. **Figure 3-1** depicts the regional location of the City.



3.3 CITY SETTING

CITY STATISTICS

The City of Atwater is one of six currently incorporated areas within Merced County. Approximately 5.25 square miles of land are within the existing City limits. The City is roughly bounded by the community of Winton and the Castle Airport and Aviation Development Center (CAADC) to the north, Buhach Road to the east, State Highway 99 to the south, and Orchard Park Road to the west. **Figure 3-2** shows the existing City limits and current (1984) sphere of influence.

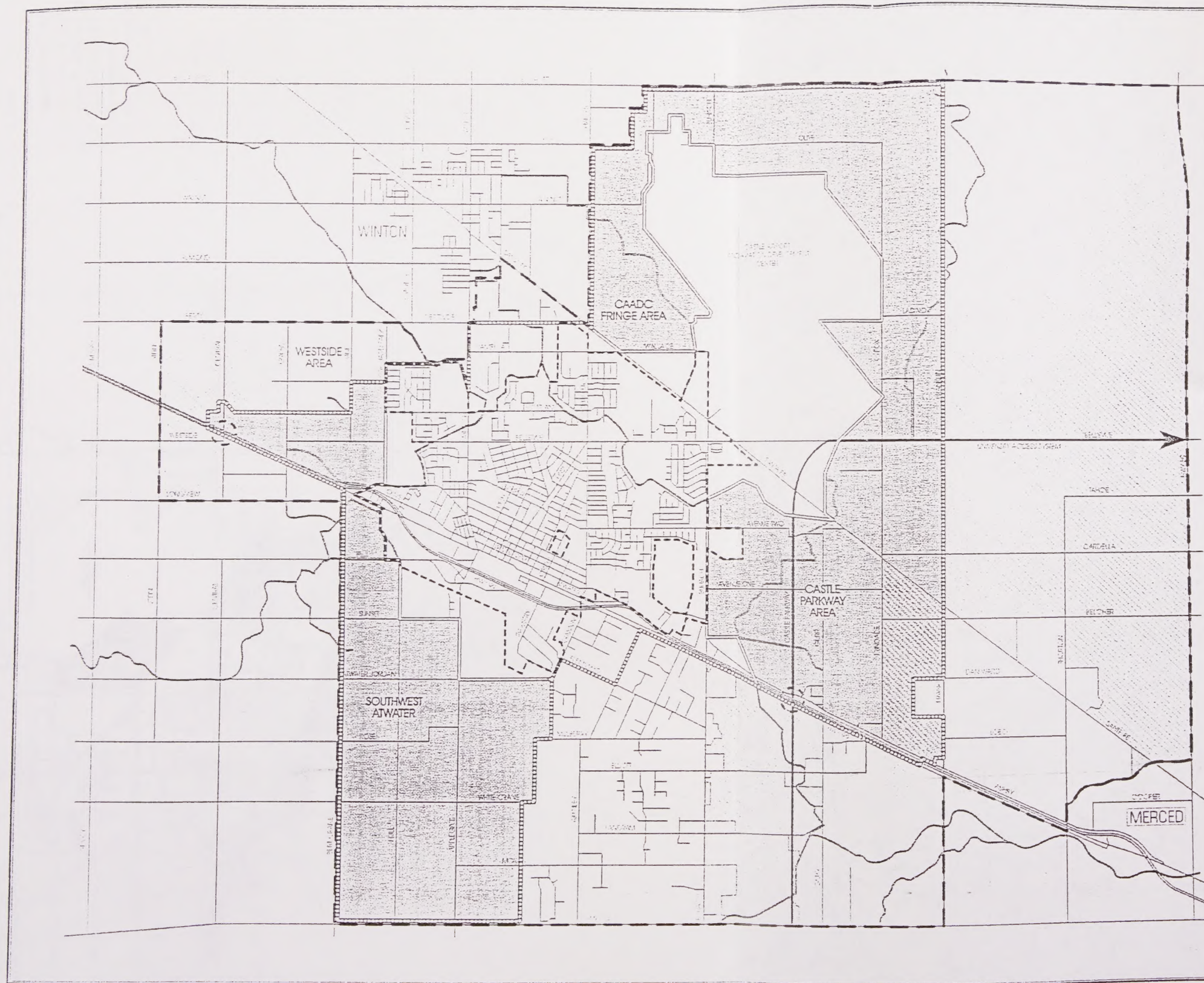
As typical of many communities located within the Central Valley, Atwater has a generally flat topography. No waterways are located within the City limits, except for two man-made channels. In planning for future growth and development, the state's *General Plan Guidelines* allow a city to include lands outside its city limits within its planning area.

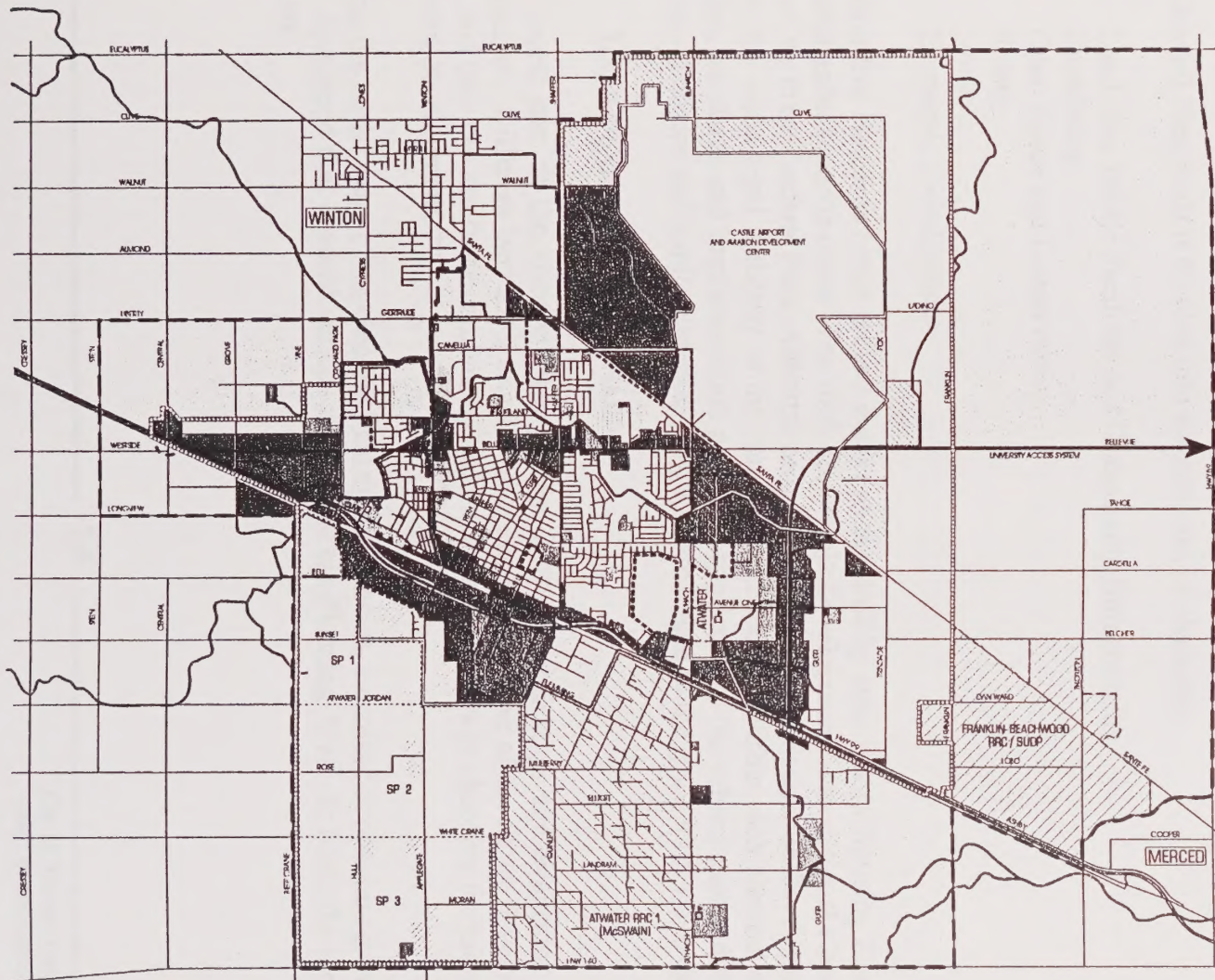
The Planning Area for the City's revised General Plan includes the land within the City limits, land within the City's current Sphere of Influence, and other unincorporated lands where the City has deemed it has an interest in land use planning. The Planning Area encompasses a broad region that is approximately bounded by State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, Stein Road to the west, and State Highway 140 to the south. Among the most significant land areas within the Planning Area boundaries are the CAADC site (which is within the City's Sphere of Influence), the Franklin-Beachwood Rural Residential Center (RRC)/Specific Urban Development Plan (SUDP), and Atwater RRC Number 1 (the McSwain area) and Number 2. **Figure 3-3** depicts the Planning Area for the proposed General Plan update.

The Planning Area outside the Atwater City limits is predominantly rural in character, except for the CAADC site. Like the City of Atwater, it is also flat in its topography. A few natural streams are located in the eastern portion of the Planning Area, and man-made channels traverse other portions. A total of 44.6 square miles are included in the Planning Area.

DEMOGRAPHIC CHARACTERISTICS

According to the 1990 U.S. Census, Atwater had a population of 22,282. The California Department of Finance estimated the 1998 population at 21,922, a 1.6 percent decline in growth that can probably be attributed to the closure of the Castle Air Force Base. However, according to the Census and the California Department of Finance, housing stock has risen approximately 13.4 percent over the decade to 8,413 in 1998. Meanwhile, the median household income for 1998, according to National Decisions Systems, was \$28,295, which is higher than estimates for the City of Merced (\$24,979) and Merced County (\$27,180), but below the statewide median of \$43,396.





LEGEND:

- City Limits
- Roads
- Proposed Castle Parkway
- Sphere of Influence (1984)
- Proposed Sphere of Influence
- General Plan Study Area Boundary
- Special Interest Boundary
- Proposed Interchange
- Proposed Bellevue Road Extension
- Franklin-Beachwood RRC / SUDP
- Atwater RRC No. 1 (McSwain)
- Atwater RRC No. 2
- Downtown Residential Transition (Mixed Use)
- Residential Transition
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Manufacturing
- Business Park
- Commercial
- Commercial Transition
- Castle Aviation & Dev. Center
- Park
- Recreation (Golf Course)
- Agriculture / Area of Interest
- Urban Reserve
- Urban Reserve / Business Park
- Path
- Institutional
- School
- Future School Site

3.4 FEATURES OF THE GENERAL PLAN REVISION

The City of Atwater General Plan provides an overall framework for development within the Planning Area. The revised General Plan is based on information contained in the *Due Diligence Working Paper* (PMC, 1998). The *Working Paper* documents the existing environmental conditions within the Planning Area, and served as the basis of the Existing Setting subsections throughout this report. The subjects covered by the *Working Paper* include land use, population, economic activity, public facilities and services, traffic and circulation, recreation, biological and cultural resources, geology and soils, noise, and safety hazards, and provides the necessary supporting documentation for the revised General Plan.

The General Plan itself is divided into six sections, or elements:

- Land Use, Public Facilities and Community Infrastructure
- Circulation
- Open Space and Conservation
- Safety
- Noise
- Economic Development

The first five elements cover subject matter as required by state law (a Housing Element will be prepared under separate cover. The sixth, Economic Development, is an optional element included by the City in the General Plan. Although an optional element, the Economic Development Element carries the same legal authority as the mandatory elements. Within each element are the goals, policies, standards and implementation programs applicable to the subject matter discussed in the element. Policies and implementation programs are linked to the goals set forth in each element.

3.5 LAND DEVELOPMENT SCENARIOS

An integral part of the General Plan process is the identification and evaluation of land use alternatives. Different land use scenarios offer alternative views of the future development of the City, and they can assist the community and its decision-makers in choosing the most desired type of future development.

During the initial stage of the General Plan update process, a number of potential growth scenarios were developed that covered various portions of the Planning Area. In brief, the scenarios are as follows:

3.0 PROJECT DESCRIPTION

CITY LIMITS AND SURROUNDING AREA

Scenario 1 - Market Study Population Projection. This scenario proposes minor land use modifications, based upon population and land use demands projected by Pacific Municipal Consultants (PMC) in the *Market Study for the City of Atwater General Plan Update (Market Study)*, dated November 1998.

Scenario 2 - MCAG Population Projection. This scenario is similar to Scenario 1, but it is based upon population projections prepared by the Merced County Association of Governments (MCAG).

SOUTH ATWATER

Scenario 1 - Rural Residential. This scenario attempts to perpetuate existing rural residential development patterns in the area south of the current City limits and Sphere of Influence. An "Urban Reserve" designation is introduced, with small areas of Low Density Residential added near the current City limits.

Scenario 2 - Low and Medium Density Residential. This scenario adds a considerable amount of Low and Medium density residential land uses in a fairly compact pattern.

AREA SURROUNDING THE CASTLE AIRPORT AND AVIATION DEVELOPMENT CENTER (CAADC FRINGE)

Scenario 1 - Open Space. A combination of Very Low Density Residential and Urban Reserve designations are applied to minimize development densities around the CAADC site.

Scenario 2 - Business Park/Commercial Development. A combination of Business Park and Commercial designations have been applied to facilitate the capture of anticipated "spillover" development resulting from successful reuse of the CAADC site.

WESTSIDE AND CASTLE PARKWAY SCENARIO

This scenario essentially expands the Planning Area boundaries to State Highway 59 in the east and Stein Road in the west. Commercial and residential development is proposed along the Castle Parkway corridor. Commercial and business park development opportunities are identified west of the existing City limits.

3.6 PREFERRED LAND USE ALTERNATIVE

Through community visioning and planning workshops, the City developed a Preferred Alternative for its updated General Plan. The Preferred Alternative is a composite of various portions of these scenarios:

- City Limits and Surrounding Area Scenario 1
- South Atwater Scenario 1
- CAADC Scenario 2
- Westside and Castle Parkway Scenario

The Preferred Land Use Alternative is shown in **Figure 3-3**. A more detailed description of the Preferred Alternative follows, by Planning Area section.

CITY LIMITS AND SURROUNDING AREA

Based on projections presented in PMC's *Market Study*, Atwater's population in the year 2020 will be 38,781, up from the estimated 1997 population of 22,282. The *Market Study* provides a detailed account of the amount of residential land needed to house this population increase. Land needs were broken down into density of development and the location of the land (City limits, Sphere of Influence and General Plan Planning Area).

Based on historic development trends, it is estimated that an additional 101.5 acres would be needed within the city limits to accommodate projected very low density residential (VLDR) development. Within the Sphere of Influence, residential growth would require an additional 116 acres for LDR development, 20 acres for medium density residential (MDR) development and two acres for high density residential (HDR) development. Residential growth in the Planning Area would require an additional 36.5 acres of LDR land, 39 acres of MDR land and four acres of HDR land.

Approximately 53.5 acres of commercial land and 83 acres of industrial land would also be needed. Projected land use demands show higher annual absorption rates based upon anticipated development trends resulting from local and regional influences including major circulation improvements, UC Merced development, prison development, and successful reuse of the CAADC. Much of the downtown area would also be placed in a new land use designation – "Downtown Residential Transition (Mixed Use)." This designation will encourage commercial and residential mixed use development. These land use demands are incorporated into the Land Use Diagram of the Preferred Alternative.

SOUTHWEST ATWATER

Southwest Atwater consists of a tract of land located south of SR 99 and the City's existing corporate limits and sphere, west of the community of McSwain, east of Bert Crane Road and north of Highway 140. Long-term future development in this area is likely to take on a predominantly residential character, although agreements will be encouraged between the City and County of Merced to ensure that some separation is maintained between Atwater and the community of McSwain.

Southwest Atwater Specific Plan Areas

Through this General Plan, the City of Atwater has identified its 2000 proposed Sphere of Influence. In order to more specifically evaluate the timing and desired character of development within Southwest Atwater, three Specific Plan areas have been identified on the Land Use Diagram. Specific Plan Areas 1, 2, and 3 contain 622, 1,140, and 1,029 acres, respectively. The combined acreage of all three areas is 2,791 acres.

Much of the land within these areas that is not already devoted to urban land uses has been designated as Urban Reserve on the Land Use Diagram. More specific land use designations will be applied in conjunction with the preparation of individual specific plans. Actual designations that are applied will be based upon the City's non-urbanized land use inventories, the unique characteristics and features of each Specific Plan area, infrastructure and services capabilities, and community desires. The City anticipates that each Specific Plan area will incorporate a village concept. However, the character and mix of land uses may vary from one Specific Plan area to another depending upon the central focus and character of the village. Plan areas is not expected to occur within the 20 year time frame associated with this General Plan.

CAADC FRINGE

The CAADC Fringe area includes lands surrounding the Castle Airport and Aviation Development Center. Successful reuse of the CAADC site is expected to create demand for additional business park development, rather than residential or some other more sensitive land use, because of the noise and compatibility concerns associated with continued use of the Airport.

The CAADC site has a Reuse Plan and Land Use Plan Map that has been incorporated into the City's General Plan by reference. However, the existing General Plan does not designate the land uses for some of the lands surrounding the site. Under the Preferred Alternative, most of the land surrounding the CAADC would be placed in a new designation, "Urban Reserve/Business Park." Under this designation, lands currently under the Merced County agricultural designation would remain agricultural until development demands warrant a transition to business park uses.

3.0 PROJECT DESCRIPTION

Land west of the CAADC would be designated for business park activities. Unlike the urban reserve/business park area, this land would not be held in a prior agricultural designation. A small portion of land adjacent to the CAADC site, north of Ladino Road, would be designated urban reserve. Merced County land use designations would apply in this area until such time as the City's primary growth areas approach build out.

CASTLE PARKWAY

The Planning Area boundaries for the existing General Plan extend no farther east than Trindade Road and Fox Road. Under the Preferred Alternative, the eastern Planning Area boundary would be moved to State Highway 59. One reason for the move is to place the Castle Parkway corridor within the Planning Area. Castle Parkway is a proposed four-lane expressway between State Highway 99 and Santa Fe Drive that would be constructed approximately one-quarter mile west of Gurr Road. Land on both sides of the Parkway corridor would be designated for commercial uses, except near Santa Fe Drive where business park uses would be allowed. Medium density residential development would be permitted west of Castle Parkway, beyond the land designated for commercial use.

Land would be designated for low density residential development along Gurr Road, while most of the land between Gurr and Franklin Roads would be designated for very low density residential development. Beyond Franklin Road, to the north and east, land would be placed under the urban reserve designation.

WESTSIDE

In anticipation of a freeway interchange that is planned for construction at State Highway 99 and Westside Boulevard, the City has extended the Planning Area for the Preferred Alternative westward to Stein Road. The Preferred Alternative designates land north of and adjacent to Highway 99, from the current City limits to the proposed interchange, for commercial uses. South of Highway 99 and east of Grove Road, land is designated for business park activities. Another business park area is designated between Vine Road and Orchard Park Road, north of Highway 99. Further north of this area, east of Grove Road, most of the land is designated very low density residential, with small areas designated as park and school sites. West of Grove Road, most of the area is designated Agricultural Area of Interest.

NEW GENERAL PLAN DESIGNATIONS

The Preferred Alternative contains three land use designations that are not found in the existing General Plan:

- **Urban Reserve (UR)** - This designation has been applied to areas within the City of Atwater's proposed (2000) sphere of influence to indicate locations which may be suitable for urban development in the future. Current Merced County agricultural designations and permitted uses will apply in these areas until such time as the City's primary and secondary growth areas approach build out.
- **Urban Reserve / Business Park (UR/BP)** - This designation has been applied to areas surrounding the CAADC site that are intended to remain at current Merced County agricultural designations until development demands warrant future transition to Business Park uses.
- **Agriculture/Area of Interest (AG)** - This designation has been applied both inside and outside of the City's proposed (2000) Sphere of Influence to indicate those locations where current agricultural and open space land uses are to be maintained in areas surrounding the City. Application of the term "Area of Interest" is intended to lay the groundwork for long-term agreements with the City and County of Merced relative to the maintenance of distinct boundaries and buffers between the City of Atwater, City of Merced, Community of Winton, McSwain and Franklin-Beachwood.
- **Downtown Residential Transition (Mixed Use)** - This designation is for areas in downtown Atwater where commercial and residential "mixed use" development will be encouraged. In general, this designation would be applied to the area bounded by Winton Way, Atwater Boulevard, First Street and Drakeley Avenue. The area approximately bounded by Atwater Boulevard, First Street, Broadway and Shaffer Road would also receive this designation.

3.7 INDIVIDUAL PROJECT PROCESSING AND FUTURE DISCRETIONARY ACTIONS

In order for development to occur within the land use designations proposed by the revised General Plan, various future discretionary actions would need to be taken. These actions may include future "planning level" approvals such as master plans, specific plans or other large-scale plans. They may also include future "project level" approvals such as tentative maps, final maps and individual permitting for specific construction activities or land uses. In all cases, future approvals must be found consistent with the provisions of the City's General Plan.

Pursuant to CEQA Guidelines Section 15152, this Program EIR may be relied upon as the first "tier" of a tiered environmental review process for projects within the City. Tiering, or the incorporation by reference of material in an EIR of broad scope into one of a narrower scope, pursuant to CEQA Guidelines Section 15168. This EIR will provide the baseline environmental data for future planning action. However, future projects will be required to undergo an environmental determination, and

in some cases they may require additional site-specific environmental evaluation. When more site-specific evaluation is required, analyses and mitigation measures within the Program EIR may be used to address more general impacts, allowing greater focus on the analysis of environmental impacts associated specifically with the project.

The City of Atwater is expected to use this EIR in its deliberations and decisions on land use matters. Other agencies that are expected to use this document in their decision-making processes are as follows:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- California Department of Water Resources
- California Air Resources Board
- California Department of Transportation (Caltrans)
- Regional Water Quality Control Board, Central Valley Region
- San Joaquin Valley Unified Air Pollution Control District

3.8 CREDIBLE WORST-CASE SCENARIO FOR PURPOSES OF THE EIR ANALYSIS

This EIR intends to provide a conservative analysis of environmental impacts, meaning that it seeks to avoid underestimating any environmental effects. One method of carrying out this type of analysis is to discuss the most credible "worst-case" scenario. In order to evaluate the credible worst-case scenario, the EIR analysis focuses upon the potential impacts associated with full build out of the land uses proposed under the Preferred Alternative for land use. Full build out of the residential portion of the land use changes would lead to a total of 22,842.38 dwelling units that would house an estimated residential population of 68,528. In addition, the General Plan proposes the following acres of land uses:

- Commercial - 906.35 acres
- Business Park - 1,621.55 acres
- Manufacturing - 158.85 acres
- Urban Reserve/Business Park - 1,302.80 acres
- Commercial Transition - 5.35 acres
- Downtown Mixed Use - 71.05 acres

The above figures exclude land use designations within the CAADC site. CAADC land use statistics are based on data in the *Working Paper*, which are as follows:

- Airport and Airport Related - 1,323.0 acres
- Business Park - 269.0 acres

3.0 PROJECT DESCRIPTION

- Commercial - 105.8 acres
- Visitor Commercial - 35.5 acres
- Commercial Recreation - 40.6 acres
- Educational Commercial Recreation - 101.4 acres
- Correctional Facility - 653.0 acres

The EIR analysis assumes the implementation of these land uses over a 20-year period, the estimated functional life span of the General Plan. This approach is adopted to avoid the underestimation of any environmental effects associated with the implementation of the General Plan.

4.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

SECTION 4.1

LAND USE

This section of the EIR describes existing land use, adopted land use designations, proposed land use designations, future potential development patterns, and evaluates land use impacts resulting from project implementation as appropriate for a program-level EIR. The analysis focuses upon the relationship between the proposed land uses of the Atwater General Plan Update, and those found within the existing General Plan.

4.1.1 EXISTING SETTING

The City of Atwater is located in Merced County along State Highway 99, 30 miles south of Modesto (Stanislaus County seat) and 10 miles north of Merced (Merced County seat), as shown in **Figure 3-1**. The City limits currently encompass approximately 5.25 square miles of land. The Atwater Sphere of Influence currently encompasses 11 square miles. The Sphere of Influence includes all the land presently within the Atwater city limits and those areas expected in 1984 to ultimately be served by the City. The most significant land area within the Sphere of Influence but outside City limits is the Castle Airport and Aviation Development Center (CAADC), located adjacent to City limits on the northeast. The Sphere of Influence also includes lands north of City limits bounded approximately by Winton Way, Gertrude Avenue, Santa Fe Drive and Wallace Road. Lands adjacent to the southern and northwestern City limits are included as well.

The General Plan Study Area encompasses approximately 44.6 square miles. In addition to all land within the Sphere of Influence, the Planning Area includes other unincorporated areas, generally bounded by State Highway 140 to the south, State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, and Stein Road and Bert Crane Road to the west. This is shown on **Figure 3-2**.

Historically, the development of Atwater centered on the railroad. The City grew around a railroad spur located along the present-day Atwater Boulevard. The Union Pacific railroad tracks parallel Atwater Boulevard, and most of the commercial and industrial activities in the City are located along these two transportation corridors. Highway 99 runs along the boulevard and the tracks. However, unlike other cities, relatively little development has occurred in Atwater along this major highway.

The Union Pacific line (formerly Southern Pacific) forms the southern boundary of the downtown area, one of the City's two major commercial areas. Downtown's development was reinforced by the placement of Highway 99, which parallels the Union Pacific tracks.

In 1976, the Atwater Redevelopment Agency proposed a redevelopment plan that centered on the downtown area. Section 404 of the plan states: "The Central Business District is intended to be the focal point of the downtown area." The Central Business District, as depicted on the Redevelopment Plan map, is bounded approximately by Winton Way to the west, Atwater Boulevard to the south,

High Street to the east, and Cedar Avenue to the north. Other commercial buildings continue from the downtown along Atwater Boulevard to Shaffer Road.

Public facilities in the downtown area include the Atwater Fire Department Station #1 at Broadway and High Street. Merced County Fire Department Station #82 is collocated in the same building. The Atwater Post Office is located on 1599 Broadway at Winton Way. At 1181 Third Street are the offices of the Atwater Chamber of Commerce. The Bloss House Museum stands at the corner of Broadway and Second Street. Adjacent to the museum is Bloss Park, bounded by Broadway, First and Second Streets, and Drakeley Avenue. At Elm Street and Packers Street is the Atwater Memorial Ball Park. Located just north of the downtown area is the Atwater branch of the Merced County Library, at Third Street and Grove Avenue. Within the vicinity of Third and Grove are Ralston Park and the Bloss Clinic.

The other major commercial area is located along Bellevue Road. Bellevue Road, an east-west route, runs to Castle Airport, which creates a break in the roadway before it resumes at Fox Road. Commercial developments are concentrated at the intersection of Bellevue with Shaffer and Buhach Roads and Winton Way. The Atwater Civic Center, which houses the Police Department and City Hall, is located at 750 Bellevue Road. Nearby is the Atwater Community Center, at 760 Bellevue Road. Across from the Community Center is Osborn Park. Farther east is Veteran's Park, within which lies the Youth Center at 2670 Buhach Road.

More recent commercial and industrial development has occurred within the section of the City south of Highway 99. The area was once the location of the Atwater Municipal Airport, which has now been converted to a business park. The Atwater Wastewater Treatment Plant is located south of Highway 99 along Industry Way. The California Highway Patrol has established an office at 1500 Bell Drive, within the Applegate Business Park.

Primary residential areas are set back from the downtown, occupying most of the area between downtown and Bellevue Road. Wide tree-lined streets are characteristic of many of the older residential neighborhoods. Another residential area is located southwest of Castle Airport. This area contains housing formerly reserved for base personnel.

The other significant influence on City development has been Castle Air Force Base. Opened in 1941, the base attracted commercial development along Bellevue Road. Although the base closed in 1995, it is currently being reused as an airport and industrial center, with commercial and institutional uses. In addition, a federal prison is being constructed in the northeastern corner of the former base site.

GENERAL PLAN LAND USE

The 1992 General Plan Land Use Designation map, included as **Figure 4.1-1**, depicts uses of land in the Atwater corporate limits and the remaining unincorporated Sphere of Influence. The arrangement of land uses is shown on the map by means of various land use designations, each of which denotes a specific type of land use (e.g., Commercial, Institutional, Medium Density Residential or Park/Open/Recreation). The City Zoning Ordinance and Specific Plans implement the Land Use Designation map at a more detailed level.

The Land Use Designation map utilizes 14 land use designations to depict the types of land uses that will be allowed in the different geographic areas of the Sphere of Influence. Land use designations used in the General Plan are intended to generally portray overall land use patterns throughout the Sphere of Influence. Aside from zoning, land use can be further refined on a case-by-case basis by the use of other planning tools, including “overlay zones” such as PUD. Total acreage and available land for each category are also shown.

Business Park -- This category evolved from the City’s development of the Applegate Specific Plan, detailed later in this section. This relatively large land use category can support a mixture of warehouse/retail, highway related commercial uses, office/professional, and light industrial. This category also includes the land above Santa Fe Drive and West of CAADC lands west of City limits that are currently occupied by J.R. Wood Company, and most of the land comprising the Applegate and Atwater Business Parks.

Commercial -- This designation is intended to accommodate a wide range of commercial activities ranging from regional commercial facilities to general and neighborhood commercial uses. Establishments may range from retail to service and entertainment uses.

Thoroughfare Commercial -- As a sub-category of the Commercial designation, the General Plan Land Use Designations map shows this land use in small pockets along the City’s thoroughfares and adjacent to existing commercial. The Thoroughfare Commercial designation is not further defined by the 1992 General Plan

Castle Specific Plan Area/CAADC – This designation refers to the geographic area subject to the Castle Air Force Base Reuse Plan and Local Agency Military Base Recovery Area. The majority of the land within this area is categorized as Aviation/Industry, followed by Institutional, Commercial, Visitor Commercial, Business Park, and Open Space/Public.

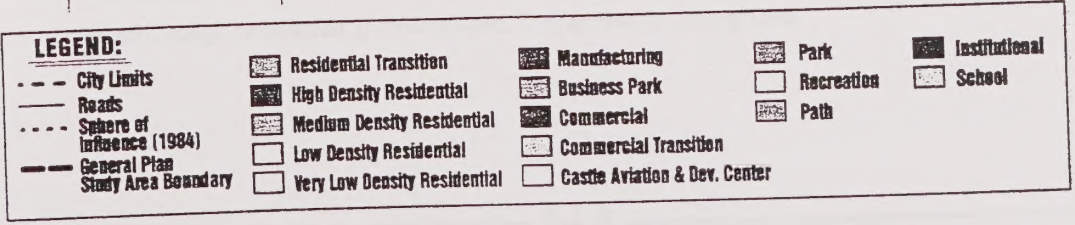


TABLE 4.1-1
1992 GENERAL PLAN LAND USE DESIGNATIONS AND CONSISTENT ZONING

Land Use Category	Consistent Zoning
Business Park (BP)	Business Park (B-P)
Commercial ©	Commercial Office (C-O) Central Commercial (C-C) Neighborhood Commercial (C-N) Commercial General (C-G)
Thoroughfare Commercial (CT)	Commercial Thoroughfare (C-T)
CAADC	N/A -- Specific Plan Area
Manufacturing (MFG)	Light Industrial (M-1) Industrial (M-2)
Residential Transition (RT)	Residential Transition (R-T)
Very Low Density Residential (VLDR)	Agricultural Residential (A-R) Residential Estate (R-E)
Low Density Residential (LDR)	Low-Density Residential (R-1)
Medium Density Residential (MDR)	Medium-Density One-Family Residential (R-1) Medium-Density Two-Family Residential (R-2) Medium-Density Multi-Family Residential (R-3) Mobile Home Park (R-M)
High Density Residential (HDR)	High-Density Multi-Family Residential (R-4)
Institutional (INST)	Conditional Use
School (SCH)	Conditional Use
Recreation (REC)	Open Space Combining (OS
Path (PATH)	Open Space Combining (OS

Source: Merced County Association of Governments, City of Atwater Zoning Code

Manufacturing -- This designation provides for a wide range of industrial activities which involve warehousing, manufacturing, processing, fabrication and other similar operations. Some uses may be noisy, and prone to emit dust, vibration, odor, and/or glare, although these impacts must be mitigated at the property line to avoid negative impacts on adjacent uses. Businesses generally involve the frequent use of large trucks for pick-up and delivery of parts and products. Typical uses often have high utility demands and require special consideration for construction to accommodate heavy truck traffic. Uses can be developed independently or as part of a subdivision.

Residential Transition -- This designation is intended to provide a transition between commercial development and adjacent residential neighborhoods. It has also been applied in locations where a mix of commercial and residential land uses have been approved. The purpose of the classification is to encourage the development of apartments and certain compatible commercial uses, or the expansion and improvement of existing structures. Residential densities up to 21 units per acre are considered compatible. Commercial land uses which may be potentially compatible include, but are not limited to: medical, professional and business offices, parking lots and structures, personal service establishments, retail stores, restaurants, motels, rooming and boarding homes, social halls, lodges, fraternal organizations and clubs, licensed nursing or convalescent homes, public and quasi-public uses, minor manufacturing when at least 75% of the product is sold on the premises.

Very Low Density Residential -- This designation accommodates the needs of residents who desire large parcels and the feeling of open space integrated with a suburban lifestyle. The permitted density range is 0 to 3.0 units per acre. The minimum parcel size permitted is 11,000 square feet, however, most parcels are greater in size. One single family residence is permitted per legally created lot. Typical land uses include: single family residences and residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities. Secondary dwelling units may be permitted consistent with state and local regulations.

Low Density Residential -- This category provides for residential development at densities that are typical for existing single family residential subdivisions within the City. The permitted density range is 3.1 to 7.0 units per acre. Parcel sizes range from 5,000 to 11,000 square feet in area. All properties must be served by public sewer and water. Typical land uses include: single family residences and residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities. Secondary dwelling units may be permitted consistent with state and local regulations.

Medium Density Residential -- This classification is designed to accommodate a variety of residential products including, but not limited to, single-family detached and attached units, zero lot line developments, duplexes, and multi-family structures. The permitted density range is 7.1 to 15.0 units per acre. Associated land uses include: residential accessory uses, churches, schools, parks, community care facilities, and necessary public utility and safety facilities.

High Density Residential -- This designation is intended to provide for multi-family units such as apartments, and/or condominiums in structures up to four stories in height. The permitted density range is 15.1 to 35 units per acre. Projects should include common open space and on-site recreational amenities such as tot lots, pools, or playground equipment. On-site day care facilities are also encouraged.

Institutional -- This designation is intended for public and quasi-public facilities, including, but not limited to, government services and facilities, fire/police stations, wastewater treatment facilities, electrical substations, domestic water treatment and storage and other similar uses. New facilities may be appropriate in any land use category based on need and environmental review. The Land Use Diagram will not be amended for new public facilities on sites that occupy less than 2 acres.

School -- This designation has been applied to areas with existing and proposed primary and secondary public school facilities. Of particular interest is the proposed High School site located on the south side of Avenue Two just east of Buhach Road. Although this designation has been applied based upon existing information, new facilities may be appropriate in any land use category based on need and environmental review.

Park-- This designation has been applied to indicate the location of existing and planned public park facilities ranging from neighborhood to community parks. Additional parkland which may be dedicated and developed in conjunction with individual subdivisions need not receive a formal designation in order to be established.

Recreation -- This designation is intended to accommodate commercial recreational facilities, including but not limited to, golf courses, driving ranges, tennis and racquet clubs, health clubs and spas, equestrian facilities, swim clubs, roller skating arenas, archery facilities, and other similar uses. The maximum floor area ratio permitted is 0.10.

Path -- This designation is indicated in locations considered desirable for development of a comprehensive system of linear parks and pathways. These facilities shall be required as appropriate within new residential developments. Utilization of the existing canal system shall serve as the backbone of this open space network.

EXISTING CAPACITY FOR DEVELOPMENT

Vacant Lands Inventory

As part of the Due Diligence for this EIR, PMC directed the preparation of an updated inventory of vacant and non-urbanized lands. This inventory utilized a combination of resources including, the Merced County Association of Governments (MCAG) Geographic Information System, the Merced

County Assessor's Data Base and a vacant land map maintained by the City of Atwater. The purpose of the updated inventory is to identify those lands within the General Plan Study Area that are currently vacant or non-urbanized to provide a clearer picture of lands which may be available for development in the future. The outcome of this work effort is depicted in **Figure 4.1-2**.

Special Planning Areas

Many jurisdictions designate some of their lands for special planning policies and procedures, beyond the conventional zoning process. Reasons for doing this vary. One is that certain lands have unique physical features that may require special attention. Another is the need or desire to develop an area in an integrated manner. Still another is the hope to entice commercial or industrial activities by offering an area where such activities can locate to their advantage. The mechanisms employed for this special planning include specific plans and planned unit developments (PUDs).

Redevelopment

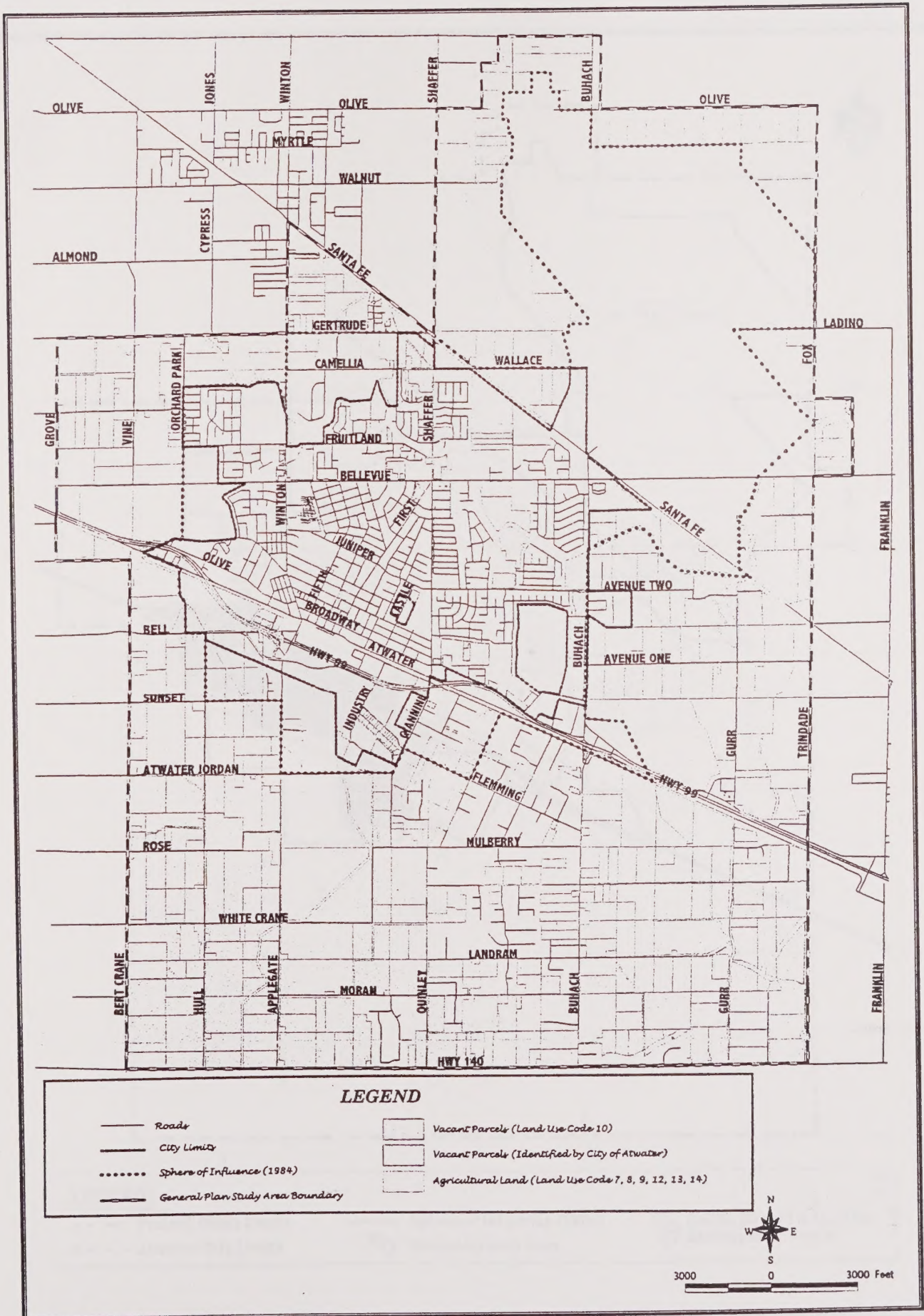
The City has established a redevelopment area in its southwestern section, as shown on **Figure 4.1-3**. In addition, the City has prepared or adopted special plans for two areas - the Applegate Business Park and the CAADC site.

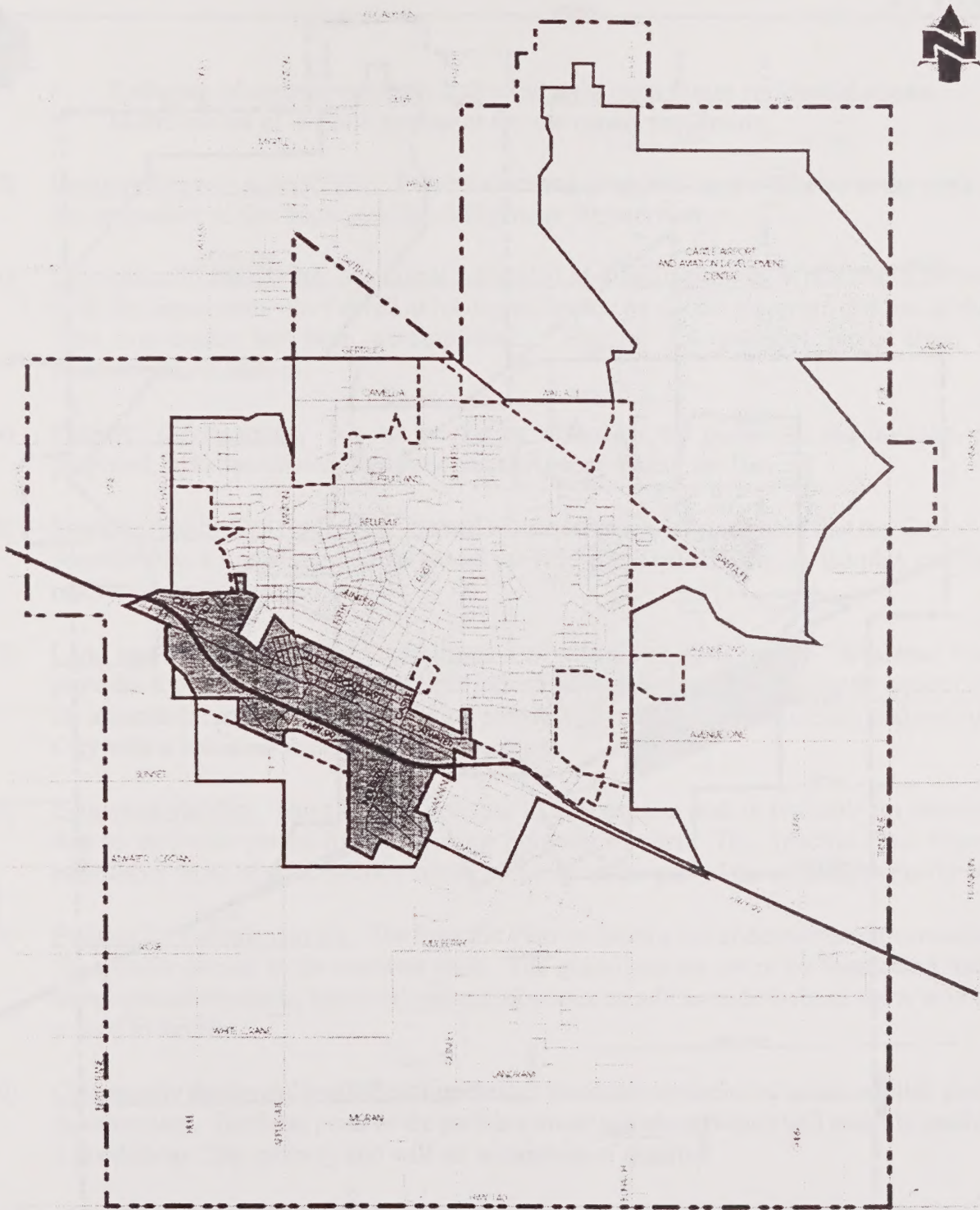
Applegate Business Park

The Applegate Business Park is located on the southwest edge of the City (**Figure 4.1-4**). It is adjacent to Highway 99, with most of its approximately 204 acres located south of the highway. The park is comprised of thirty parcels of land, with 23 separate property owners. Parcels range in size from less than one-quarter acre to 50 acres. Multiple ownership of the business park property makes it difficult to determine the specific use and the timing of parcel development. Thus, in order to establish a development theme, the Atwater Redevelopment Agency embarked on the preparation of a specific plan. A draft specific plan was completed in 1991 and a final plan was subsequently adopted.

The Applegate Business Park Specific Plan contains nine elements:

- 1) **Specific Plan Goals.** The Specific Plan adopted eight goals:
 - Development that enhances the City's quality of life.
 - Development that produces public revenues for the City.
 - Development that generates jobs.
 - Development that takes advantage of freeway location and exposure.
 - Improved freeway accessibility.
 - Establishment of a prestigious gateway for the City.



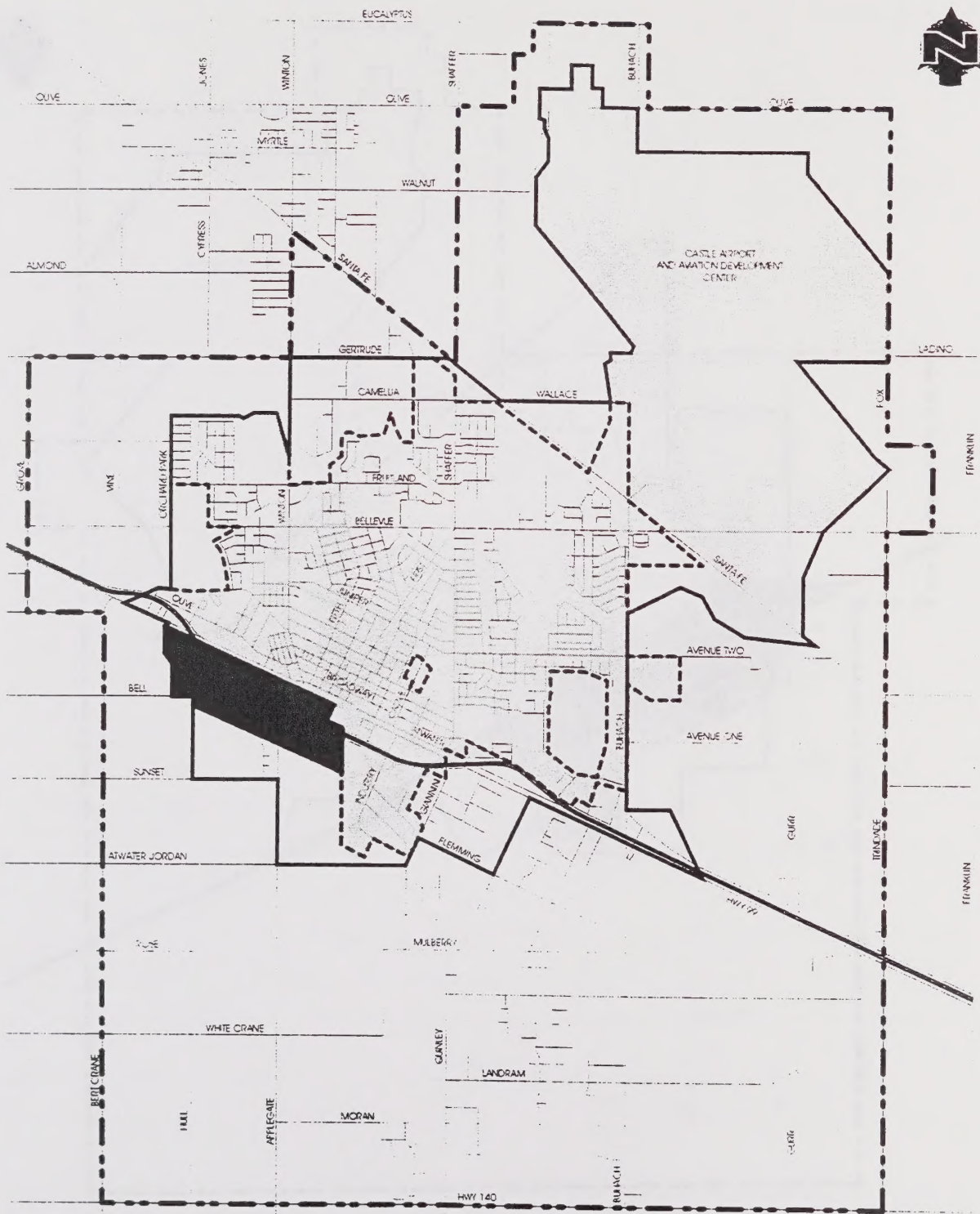


LEGEND:

- Project Study Limits
- ... Atwater City Limits

— Sphere of Influence (1984)
 Redevelopment Area

 Castle Airport & Aviation Development Center



LEGEND:

- Project Study Limits
- - - Atwater City Limits

 Sphere of Influence (1984)
Business Park



Castle Airport & Aviation
Development Center

- Buffering of commercial/light industrial uses from future residential uses.
 - Identification of suitable treatment for the canals and drains.
- 2) Improve freeway accessibility. Foremost among proposed improvements in the park area is the upgrading of the Applegate Road/Highway 99 interchange.
 - 3) Conversion of the Atwater Municipal Airport to M-1 Industrial use. While not in the business park, the airport area was viewed as having an impact on the development and use of the park. This conversion has been accomplished. Chapter 3.0 provides more detail in the Redevelopment section.
 - 4) Property Development. A joint marketing effort for the parcels in the business park is proposed, with the Atwater Redevelopment Agency taking the lead.
 - 5) Specific Plan by City resolution. Instead of an ordinance, it is proposed that the City adopt the Specific Plan by resolution. This would provide greater flexibility, as the plan can be more readily revised as needed.
 - 6) Land use. The Specific Plan establishes a new land use designation - "Business Park." It provides for both commercial and light industrial uses, but it does not specify a particular use for a particular parcel. This designation provides developers with flexibility and provides the City with a cohesive physical development.
 - 7) Economic viability. Not all of the property in the business park is available for development due to the value placed by the existing property owners. The Specific Plan attempts to establish a sense of marketability of the property on the part of the existing property owners.
 - 8) Policies for specific parcels. The Specific Plan includes a list of development considerations for specific parcels in the business park. The guidelines are not to be considered inflexible development standards, but development proposals should include them or show why there is a need to deviate.
 - 9) Community design and beautification. Design standards are included to accomplish a cohesive development. The focal point of the park is a tower and plaza, which will assist in establishing a prestigious City gateway and will set a standard of quality.

More than 90 percent of the land within the Applegate Business Park is designated Business Park. The remaining land is designated either Commercial or Linear Park. The Specific Plan Area is an overlay district, which means that all proposed development must conform to the provisions of the

land use identified on the Land Use Diagram in the General Plan, as well as the applicable provisions of the Specific Plan.

CAADC

In 1991, the Department of Defense announced the closure of Castle Air Force Base. The base was formally decommissioned and closed in September 1995. Upon closure, it was renamed the Castle Airport and Aviation Development Center (CAADC).

In August 1995, the Castle Joint Powers Authority (JPA) was formed to oversee and facilitate economic reuse of the former military installation. The JPA prepared a Preliminary Reuse Plan, with Air Force participation, that was used by the Department of Defense in issuing a Record of Decision for disposal of base property. In 1996, the JPA prepared the Castle Air Force Base Reuse Plan, a long-term plan to address local planning issues necessary for the successful reestablishment of commercial, industrial and institutional land uses at the former base. As a prelude to applying for annexation of the CAADC site, the Atwater City Council on December 1997 formally adopted the Reuse Plan and associated Land Use Plan Map with specified exclusions as the City's land use plan for all territory within the CAADC boundary.

The Reuse Plan quantifies existing resources at the CAADC site, and it contains a preliminary market assessment for reuse opportunities. Most importantly, it provides for a variety of land uses and indicates the locations where these uses would be allowed. Nine land use designations are applied to the 2,566 acres the Reuse Plan covers. The location of CAADC is shown on **Figures 4.1-3** and **Figure 4.1-4** above, and of **Figure 3-4**, Preferred Land Use Alternative. **Table 4.1-6** below lists the land use designations for the CAADC site and the number of acres designated.

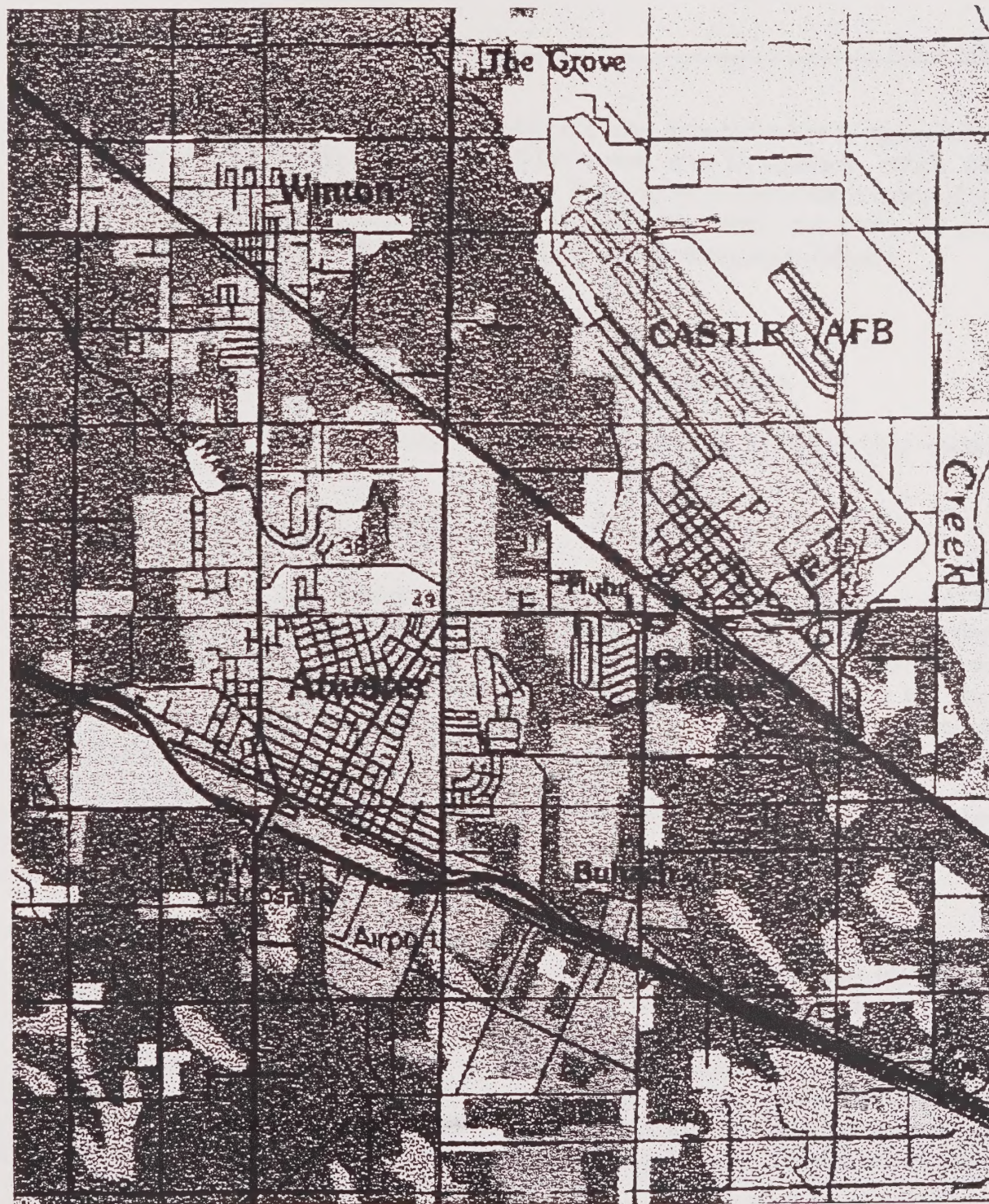
TABLE 4.1-2
CASTLE AFB REUSE PLAN LAND USES

Land Use	Acreage
Airport and Airport Related	1,323.0
Correctional Facility	653.0
Business Park	269.0
Medical	14.3
Educational Commercial Recreation	101.4
Visitor Commercial	35.5
Commercial	105.8
Commercial Recreation	40.6
Open Space	23.4
Total	2,566.0

The JPA currently manages base closure and reuse activities. Should annexation be pursued and approved in the future, the City would make all land use decisions and provide municipal services. The JPA would continue to provide maintenance for certain facilities and common areas after annexation.

SURROUNDING LAND USES/AGRICULTURAL LAND

As shown in **Figure 4.1-5, General Soil Conditions**, the vast majority of undeveloped land in and adjacent to the Planning Area is classified as either Prime Farmland, Unique Farmland, or (to a lesser extent) Farmland of Local Importance. Agriculture has been, and continues to be, one of the most important economic sectors in Merced County. The County leads the state in the production of sweet potatoes and chickens, and it is one of the top five producing counties of numerous agricultural products, including almonds, cantaloupes, cotton lint, figs, hogs and pigs, milk and cream, peaches, sugar beets, market tomatoes and wool. The total value of all agricultural commodities produced in Merced County in 1997 was \$1,526,824,000.



Approximately 86 percent of the land in the Atwater Planning Area is devoted to agricultural uses. The predominant crop in the Atwater/Winton/Livingston area is almonds, which take up approximately 32 percent of the agricultural acreage. Ranking behind almonds in terms of acreage are pasture/range (14 percent), grains (mainly corn and oats - 13 percent) and grapes (13 percent). Crop patterns in the Planning Area, relative to the City, can be described as follows:

South - primarily almond orchards and grains.

East - more almonds and grains, but also pasture, grapes and poultry.

North - almonds, grapes, fruit trees, and more pasture (among others) moving towards the Merced River.

West - primarily almond and fruit orchards.

The state Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) produces maps of Important Farmlands and keeps records of farmland acreage. Information depicted within the 1996 Important Farmland Map for Merced County has been summarized in **Figure 4.1-5** and shows that the City is mostly surrounded by prime farmland, land which has the best combination of physical and chemical characteristics for crop production. A large parcel of land adjacent to and southwest of the City is classified as Farmland of Local Importance. This is land of importance to the local agricultural economy, and it may include dairies, dryland farming, aquaculture and uncultivated land with soils that qualify as Prime Farmland or Farmland of Statewide Importance. This parcel contains Atwater sand soil, which is considered prime farmland soil.

One of the principal constraints to the expansion of the City is the adverse impact expansion would have on prime farmlands. Given the City's location within the San Joaquin Valley, urbanization in any direction would mean the loss of farmland. Further development in the unincorporated areas would also lead to farmland conversion. Such a process has been occurring in the McSwain area, where residential subdivisions have been gradually displacing almond orchards. The Phased Development Plan in the City's current (1992) General Plan encourages urban development toward the south and southeast, where significant development already exists, while restricting expansion in other directions (with the notable exception of annexing the CAADC site to the northeast).

The issue of the City's expansion into surrounding farmland is one aspect of a larger issue that has become a matter of concern - the conversion of farmland in the state overall. The Central Valley, of which the San Joaquin valley is a part, is California's principal agricultural region, contributing more than \$22 billion in commodity value to the state's economy and billions more from associated activities. Yet the Central Valley also has become one of California's most rapidly growing regions,

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with its population increasing by almost 50 percent between 1980 and 1995. Cheaper land and housing costs, a good transportation network, and a shift in the economy to more high technology and service industries has led to the relocation of residents and businesses from the industrial centers in the Bay Area and Southern California to the Central Valley. As a result, an estimated 15,000 acres of farmland per year in the Central Valley have been converted to urban uses between 1984 and 1994. Farmland conversion is a particularly significant issue in the San Joaquin Valley, where some of the most rapidly growing metropolitan areas - Stockton, Modesto, Fresno and Bakersfield - are located.

In Merced County, farmland conversion has apparently not been a serious problem. The state Department of Conservation, through its Division of Land Resource Protection, keeps records of land use conversion. For the most recent period such records were kept, 2,203 acres of agricultural land in the County were converted to nonagricultural uses from 1994 to 1996. About 1,394 of these acres were grazing land; the rest were important farmland. Compared with a total of 1,261,419 acres inventoried, the converted land accounts for only 0.17 percent of County land. Approximately 1,331 of the converted land falls in the state's Other Lands category, which covers a variety of other land uses (see Glossary for definition). Only 872 acres of land were converted to urban and built-up uses. However, conversion to such uses could accelerate with greater population growth and economic development. No records are available for the amount of farmland in the Atwater area that has been converted to urban uses. But since Atwater is surrounded by important farmland, any growth by the City (except toward the northeast and the CAADC site) would necessarily mean the conversion of agricultural lands.

There have been some actions taken to preserve agricultural lands. Perhaps the best known measure is the California Land Conservation Act of 1965, better known as the Williamson Act. Under the Williamson Act, landowners may choose to enroll their lands in the preservation program by signing contracts with participating local governments. By signing these contracts, landowners agree to restrict their lands to agricultural or open space uses. In return, local governments agree to tax the land at its use value, rather than its market value. This results in lower property taxes for the landowner. To offset some of the loss of property tax revenue, the state makes subvention payments to local governments, based on the number of Williamson Act land acreage eligible for these payments. Merced County has not chosen to participate in the Williamson Act program.

As urbanization moves out into agricultural areas, urban/rural conflicts sometimes occur. Residential development in rural areas is often located adjacent to or near agricultural lands to take advantage of open space values. New residents may be subject to impacts from agricultural operations that adversely affect the enjoyment of their property, including noise, dust, chemical fertilizers and pesticides. In turn, these agricultural activities may face pressure to modify, curtail or cease the operations that generate the nuisances to adjoining residences.

VISUAL RESOURCES

The Atwater area is largely devoted to agricultural uses. As such, the open space areas associated with this specific land use offer added benefits as scenic resources. The current (1992) General Plan has designated the following routes as scenic corridors:

- Atwater Boulevard
- First Street
- Bellevue Road
- Shaffer Road
- Winton Way
- Broadway from Winton Way to First Street
- Buhach Road
- Third Street
- Part of Grove Avenue
- All entrances to the City

4.1.2 REGULATORY FRAMEWORK

RELATED GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN

Community Design Issues and Trends

GOAL LU-1. Create attractive residential streetscapes and neighborhoods.

Policy LU-1.1. Develop design guidelines for new residential neighborhoods that have a human scale and are oriented to the pedestrian.

Policy LU-1.2. Support and guide the rehabilitation of older residential structures that enhance the character of a neighborhood.

Policy LU-1.3. Design streets with a priority on neighborhood structure and pedestrian scale.

Implementation Program LU-1.a. The City shall consider the establishment of a low-interest loan program for the rehabilitation of older housing units, using Community Development Block Grant (CDBG) funds or other funding sources.

Implementation Program LU-1.b. The City shall develop design guidelines for residential neighborhoods and streets that emphasize pedestrian use. These guidelines shall illustrate desired development patterns, architectural forms and landscaping.

Implementation Program LU-1.c. The City shall provide incentives to developers who follow residential design guidelines. Such incentives may include, but are not limited to, expedited project review and density bonuses.

GOAL LU-2. Ensure that the appearance of non-residential development contributes positively to the community's image.

Policy LU-2.1. Develop design guidelines for commercial, industrial and business park development that present an attractive public view and are integrated with the surrounding area.

Policy LU-2.2. Encourage design of large-scale commercial, industrial and business park projects that are oriented to a human scale.

Implementation Program LU-2.a. The City shall prepare design guidelines for commercial, industrial and business park development that illustrate desired development patterns, architectural forms and landscaping. For large-scale projects, the guidelines shall encourage the incorporation of features that bring the development to a more human scale, such as sensitive massing, building articulation, and the incorporation of plazas and courtyards.

Implementation Program LU-2.b. The City shall provide incentives to developers who follow non-residential design guidelines. Such incentives may include, but are not limited to, expedited project review.

Revitalization and Enhancement of the Downtown

GOAL LU-3. Preserve and enhance the unique character of Downtown Atwater.

Policy LU-3.1. Develop design guidelines for Downtown that maintain and enhance its pedestrian scale and orientation and ensure a consistent architectural theme.

Policy LU-3.2. Continue efforts to improve and rehabilitate buildings, housing and infrastructure in Downtown.

Policy LU-3.3. Accommodate a variety of uses in Downtown Atwater that operate beyond standard business hours to increase activity within the City core.

Policy LU-3.4. Encourage development of mixed use projects within the Downtown area. Developments should be designed with active ground floor commercial or service uses with residential or office units above.

CAADC Reuse Plan

GOAL LU-7. Ensure that long term economic and social benefits, such as employment, are maximized through reuse of the former castle air force base.

Policy LU-7.1. Complete annexation of the CAADC, upon finalization of a mutually acceptable tax sharing agreement with the County of Merced.

Policy LU-7.2. Accomplish full economic reuse of the Castle property.

Policy LU-7.3. Promote the Joint Powers Authority's reuse efforts in coordination with City economic development efforts.

Policy LU-7.4. Coordinate economic development functions at Castle with the JPA, the City and County of Merced, and various other economic development entities which are promoting revenue and employment-generating businesses within the region.

Policy LU-7.5. Appropriately locate land uses to minimize conflicts and maximize reuse opportunities.

Policy LU-7.6. Utilize the Castle AFB Reuse Plan and Land Use Plan Map, adopted by the JPA, or subsequently adopted document as the City of Atwater's Land Use Plan and General Plan land use designations for properties within the Castle Airport and Aviation Development Center boundary.

Policy LU-7.7. During review of individual projects, ensure consistency with the Reuse Plan, map and policies or any subsequent documents developed jointly and approved by the City of Atwater, City of Merced, JPA and County of Merced.

Policy LU-7.8. Development applications submitted to the City shall be referred to the County of Merced for comment.

Policy LU-7.9. In order that reuse activities will not compromise long-term toxic clean-up programs at Castle, all applications received by the City involving uses with the potential to create groundwater contamination or other environmental hazards shall be referred to the Air Force Base Conversion Agency for comment.

Policy LU-7.10. Availability of sewer, water and drainage facilities shall be demonstrated for all reuse activities.

Policy LU-7.11. A long-term fiscal plan for maintenance and construction of capital facilities shall be prepared.

Policy LU-7.12. Ensure development/reuse activities contribute their fair share toward capital improvements necessary to offset project impacts.

Policy LU-7.13. Utilize assessment districts, major thoroughfare zones of benefit, and/or other financing tools, based on local traffic studies to ensure reuse activities contribute their fair share for new and upgraded transportation facilities.

Policy LU-7.14. Prior to sunset of the Air Force caretaker agreement, a tax/revenue sharing agreement or other appropriate mechanism, shall be developed and implemented to fund public safety services at Castle.

Policy LU-7.15. Application procedures shall be streamlined to minimize project approval timelines within the Reuse Plan area.

Policy LU-7.16. Development applications and plot plans will be accepted for review by the City after the JPA has indicated that it will consider leases for such reuses.

Policy LU-7.17. City staff will work cooperatively with JPA staff to achieve application processing timelines coordinated with the JPA lease issuance process.

Policy LU-7.18. Utilize the Castle Reuse Plan, "Plan Implementation," section as a general guide for permit application review and processing procedures, in combination with appropriate zoning provisions of the City Code.

Policy LU-7.19. Modify permit application review, processing and approval procedures as necessary to:

- Improve coordination between the City, JPA and County of Merced.
- Simplify the application process.
- Reduce approval timelines, particularly for minor projects or activities.

Policy LU-7.20. Should the City, County and JPA deem appropriate, the City of Atwater shall support the creation of an Airport District for all or portions of Parcel A.

Policy LU-7.21. Any applications for reuse on lands within Castle that have been retained by the federal government shall be accompanied by a statement from the JPA Board and/or Air Force Base Conversion Agency that they are considering leasing to the applicant.

Policy LU-7.22. All reuse activities shall be in conformance with the California Environmental Quality Act.

Policy LU-7.23. Environmental review (CEQA compliance) shall assume full military operations as they were in effect at the time of the base closure announcement in September 1990, as the baseline environmental setting when determining impact thresholds for reuse activities, consistent with State law, the Air Force base closure Environmental Impact Statement (EIS), and the JPA's Reuse Plan EIR. Projects which exceed this threshold will be subject to further review under CEQA prior to approval by the City.

Policy LU-7.24. Preserve the utility and full civilian/general aviation use of Castle Airport.

Policy LU-7.25. Development standards shall be flexible in consideration of historic mixed-use development patterns as a military base.

Redevelopment Area and Plan

GOAL LU-8. Support the efforts of the Atwater Redevelopment Agency to upgrade infrastructure, provide affordable housing opportunities, and remove blight within the Redevelopment Area.

Policy LU-8.1. The City will continue exercise its redevelopment powers to implement the policies of the General Plan, including the acquisition of land for reuse, the funding of public improvement projects such as streets and parks, and provision of financial assistance to developers and homeowners.

Implementation Program LU-8.a. The City will identify large properties or property groups with high development potential and, where feasible, participate in their development through Redevelopment Agency powers such as land assembly, planning and financing, and selection of a master developer.

Implementation Program LU-8.b. The City through the next five-year Implementation Plan of the Redevelopment Agency, shall identify blighted areas and develop measures to eliminate blight. Measures shall include a financing mechanism.

Comprehensive Annexation Plan

GOAL LU-9. Pursue orderly expansion of the Atwater community.

Policy LU-9.1. Facilitate phased development of the City's proposed growth areas.

Policy LU-9.2. Consider the following criteria when annexation and/or expansion of the City's Sphere of Influence is contemplated:

- Is the soil suitable for agriculture according to the soil capability?
- Is the present parcel size a sufficient size for economic agricultural use?
- Is the land presently or recently used for agriculture?
- Will nonagricultural use create conflicts with adjacent agricultural uses?
- Have provisions been made to provide adequate levels of public services to satisfy the demands generated by the proposed development?
- Will an individual waste disposal system contaminate the surface or ground water table?
- Will intensive use present hazards to public health, welfare, or safety?
- Will urban use impact significant open space and/or conservation values?
- Is there an adequate supply of available vacant land within the existing urban boundary to accommodate reasonably anticipated or historic growth needs over the next 10 years?
- Is the proposal consistent with the goals and policies of the City's General Plan or Specific Plan?

Implementation Program LU-9.a. Consider the information provided in (General Plan) Tables 2-7 and 2-8 when evaluating the current Sphere of Influence for adequacy in accommodating projected growth in 5, 10 and 20 years, and submit an application for a revised Sphere of Influence to LAFCO. The "Proposed Sphere of Influence" on the Preferred Land Use Diagram shall be used as a guide for the City's future application.

GOAL LU-10. Maintain a compact urban form.

Policy LU-10.1. Apply an Urban Reserve land use designation to areas within the Planning area that are outside of the City's anticipated 10 year growth boundaries and have not already developed with urban or rural residential land uses.

Policy LU-10.2. Annex and redesignate areas from Urban Reserve to other appropriate land uses when necessary based upon development demands.

Policy LU-10.3. Prior to annexation, lands designated as Urban Reserve may be developed consistent with current Merced County agricultural land use designations.

Implementation Program LU-10.a. Monitor the City's inventory of vacant land for residential and non-residential land uses. When the inventory of vacant lands for a particular category reaches 75% build out, the City shall pursue any necessary Sphere of Influence modification/annexation and redesignate areas identified as Urban Reserve to maintain at least an additional 10 year supply of vacant land based upon projected demands.

GOAL LU-11. Identify appropriate locations and timing for future Business Park development.

Policy LU-11.1. Utilize the Urban Reserve/Business Park designation to identify areas considered appropriate for future Business Park development on the Land Use Diagram.

Policy LU-11.2. Annex and redesignate areas from Urban Reserve/Business Park to Business Park when appropriate based upon development demands.

Policy LU-11.3. Prior to annexation, lands designated as Urban Reserve/Business Park may be developed consistent with current Merced County agricultural land use designations.

Implementation Program LU-11.a. Monitor the City's inventory of vacant land designated for Business Park uses surrounding the CAADC site. When these areas have reached 75% build out, the City shall pursue annexation and redesignate areas noted as Urban Reserve/Business Park to Business Park. The amount of land annexed and redesignated should provide at least a 10 year supply of vacant Business Park land based upon projected demands.

GOAL LU-12. Ensure the utilization of consistent City and County development standards within proposed growth areas.

Policy LU-12.1. Encourage the County of Merced to review development proposals within Atwater's proposed growth areas for consistency with the development standards of the City.

Implementation Program LU-12.a. The City shall seek to establish a formal agreement with the County to ensure that consistent development standards are implemented within the City's proposed growth areas. The agreement shall also include a review and approval process for land use designation changes for the unincorporated lands within the City's Sphere of Influence.

Areas of Interest Outside the Existing Sphere of Influence

GOAL LU-13. Maintain the agricultural and open space character of lands within Atwater's "Areas of Interest."

Policy LU-13.1. Encourage Merced County to continue to apply land use designations within Atwater's Areas of Interest that will ensure the maintenance of the existing agricultural and open space character of those lands.

Implementation Program LU-13.a. Pursue the execution of a formal agreement with Merced County to ensure the long term maintenance of the agricultural and open space character of lands within Atwater's Areas of Interest.

GOAL LU-14. Preserve Atwater's community identity by maintaining buffers between Atwater and the community's of Merced and Winton.

Policy LU-14.1. Designate land uses in the Planning Area that do not encourage urbanization of the land areas between Atwater and Merced and Atwater and Winton.

Policy LU-14.2. Cooperate with the City of Merced and Merced County to explore the creation of a "greenbelt" that maintains a significant portion of the land area between Atwater and Merced, and Atwater and Winton, in open space or agricultural uses.

Implementation Program LU-14.a. Work with the City of Merced and Merced County, to conduct a feasibility study for the creation of greenbelts between Merced and Atwater, and Atwater and Winton. This study shall include a review of other greenbelt programs such as the Dixon/Vacaville Greenbelt in Solano County. If the study finds greenbelts to be feasible, the City shall actively assist in establishing and finding funding for a greenbelt program.

GOAL LU-15. Consider existing Plans for the Atwater Rural Residential Community No. 1 (McSwain), Franklin-Beachwood RRC/Specific Urban Development Plan (SUDP), and the Winton SUDP when conducting the City's planning efforts.

Policy LU-15.1. Support implementation of Merced County's existing Community Plans for the Atwater Rural Residential Community No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP and the Winton SUDP.

Policy LU-15.2. Discourage the expansion of existing RRC and SUDP boundaries within the Atwater Planning Area.

Implementation Program LU-15.a. Work closely with the County of Merced if modifications to existing Community Plans for the Atwater RRC No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP and Winton SUDP is proposed in the future to ensure that impacts to the City of Atwater are considered.

Implementation Program LU-15.b. Pursue the establishment of an agreement with Merced County which assures that the existing boundaries of the Atwater RRC No. 1 (McSwain), the Franklin-Beachwood RRC/SUDP and Winton SUDP will not be expanded within the Atwater Planning Area.

Implementation of Land Use Diagram

GOAL LU-16. Ensure proper and efficient administration of the General Plan Land Use Diagram.

Policy LU-16.1. The City of Atwater Planning Department shall interpret land use designation boundaries and their application to individual parcels. Such actions will not constitute a General Plan Amendment.

Policy LU-16.2. In the event that a disagreement should arise between the Planning Department's land use designation finding and the property owner's opinion, the Planning Commission shall review the matter and make a final determination.

Policy LU-16.3. All requests to amend any portion of the General Plan shall be subject to the environmental review, public notice, hearing requirements, and consistency provisions of State law.

Agricultural Resources

GOAL CO-4. Ensure the continued viability of agriculture in the area surrounding the City's proposed Sphere of Influence.

Policy CO-4.1. Comply with all agricultural preservation policies and implementation programs developed jointly by the City and Merced County.

Implementation Program CO-4.a. Continue to work with the County of Merced to develop mutually acceptable policies and implementation programs designed to avoid and/or mitigate the conversion of Agricultural land outside of the City's proposed Sphere of Influence.

Scenic Resources

GOAL CO-10. Enhance and protect the scenic resources within the City.

Policy CO-10.1. Utilize landscaping and other features to enhance and beautify major streets and gateways into and through the City.

Policy CO-10.2. Avoid excessive signage and other features which could detract from the scenic quality of prominent circulation routes.

Implementation Program CO-10.a. Explore the use of redevelopment financing to beautify streets and gateways within the Redevelopment Project Area.

Implementation Program CO-10b. Identify and pursue other funding sources which could be used to beautify streets and gateways outside of the Redevelopment Project Area.

4.1.3 PROJECT IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Land use impacts are considered significant if implementation of the project will:

- 1) Physically divide an established community;
- 2) Conflict with existing land uses;
- 3) Cause a substantial adverse change in types or intensity of existing or planned land use patterns;
- 4) Conflict with adopted goals and policies of the General Plan or other planning program adopted for the purpose of avoiding or mitigating environmental impacts; or,
- 5) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program) to non-agricultural use.

METHODOLOGY

This analysis focuses on a comparison of the changes in land use designations and policies between the 1992 Atwater General Plan and the 2000 General Plan Update. The primary source for this information was the Land Use Elements of the two plans, the associated land use maps, and the *Working Paper*.

PROJECT IMPACTS

Land Use Compatibility

Impact 4.1-1 The Draft Plan allows for development that has the potential to disrupt the existing physical arrangement of land use by allowing for subsequent industrial, commercial, and residential development that may affect the pattern and characteristic of existing urbanized areas, which could disrupt existing rural communities outside of the City limits. These land use changes are considered to present a **potentially significant impact** to the existing and surrounding land use condition.

As noted In Section 3.0 (Project Description), the Preferred Land Use Alternative under evaluation within this EIR (**Figure 3-4**) represents a composite of various portions of other development scenarios that were considered for the Planning Area during the General Plan update process.

A comparison of the existing and proposed land use designations under the Preferred Alternative, along with the acreage, estimated number of dwelling units permitted, building intensity and population are shown in **Table 4.1-3**. Approximately 28,547 acres are designated, which is 10,231 acres more than the existing General Plan designates. **Table 4.1-3** also shows the changes under each land use designation in total acreage and dwelling units per acre or building intensity for each land use designation. The Preferred Alternative uses the same land use designations as the existing General Plan, but also proposes four additional designations:

Urban Reserve - designation for areas intended to remain at current Merced County agricultural designations until such time as the City's primary and secondary growth areas approach build out. Approximately 14,121.3 acres of land is proposed to fall under this new designation. This land is not anticipated for development within the horizon of the General Plan.

Urban Reserve/Business Park - designation for approximately 1,302.8 acres surrounding the CAADC site that are intended to remain at current Merced County agricultural designations until development demands warrant future transition to business park uses.

Downtown Residential Transition (Mixed Use) - designation for areas in downtown Atwater where commercial and residential "mixed use" development will be encouraged. This includes approximately 71.05 acres.

Agriculture/Area of Interest (AG) - This designation has been applied both inside and outside of the City's proposed (2000) Sphere of Influence to indicate those locations where current agricultural and open space land uses are to be maintained in areas surrounding the City. Application of the term "Area of Interest" is intended to lay the groundwork for long-term agreements with the City and County of Merced relative to the maintenance of distinct boundaries and buffers between the City of Atwater, City of Merced, Community of Winton, McSwain and Franklin-Beachwood.

The Preferred Alternative also includes replacing the existing Commercial-Residential Transition designation into Commercial Transition (approximately 5.35 acres located east of Winton Avenue at Juniper) and Residential Transition (50.5 acres generally located north of State Highway 99 between Downtown Residential and Low Density Residential, and between Commercial and Low Density Residential).

The Preferred Alternative identifies the proposed expansion of the City's existing Sphere of Influence; however, actual expansion of the Sphere will be pursued following adoption of the General Plan. It also seeks to maintain buffers of open space or low-density development between the City and adjacent communities, notably the community of Winton and the City of Merced. Established Rural Residential Centers (RRCs) within the Planning Area, mainly the Franklin/Beachwood RRC (712 acres of Urban Reserve and Very Low Density Residential) and the

Atwater RRC Number 1 (the McSwain area) and Number 2, are recognized under the Preferred Alternative.

As shown in **Table 4.1-3**, all but two of the land use designations (Recreation and Path) have had total acreage reconfigured by the Preferred Land Use Alternative. Most notably, Very Low Residential land was reduced by 5,571.05 acres. Low Density Residential gained approximately 369.75 acres, and Medium and High Density Residential gained 89.5 acres and 3.8 acres, respectively. The Commercial and Business Park designations gained 320.35 acres and 308.05 acres, respectively, while lands designated Manufacturing were reduced by 24.65 acres. Finally, land designated Park was reduced by 27.85 acres, and Institutional was reduced by 2.5 acres. The School designation gained 3.3 acres. The land use designations proposed and associated zoning are shown in **Table 4.1-4**.

General Plan Holding Capacity

Tables 4.1-5 and **4.1-6** provide estimates of the number of housing units, population, and square footage of non-residential development that will be accommodated by this General Plan based upon the designations shown on the Land Use Diagram. Adjustments for existing development have not been made recognizing that, over time, many areas will redevelop in accordance with this Plan.

Nonetheless, the General Plan allows for development that has the potential to disrupt the existing physical arrangement of land use by allowing for subsequent industrial, commercial, and residential development that affects the pattern and characteristic associated with existing rural communities adjacent to the City. Mitigation is discussed on page 36, following the display of **Tables 4.1-2** through **4.1-5**.

4.1 LAND USE

Land Use Category	1992 Land Use Diagram				Final Preferred Alternative			Change In Total Acreage	Change In Total Dwelling Units or Building Intensity	Change In Population
	Average Du/Acre or FAR	Total Acreage	Total Dwelling units or Building Intensity	Estimated Residential Population	Total Acreage	Total Dwelling units or Building Intensity	Estimated Residential Population			
Residential Transition	0.30	52.00	679,536.00		50.50	659,934.00		-1.50	-19,602.00	
High Density Residential	25.00	120.50	3,012.50	9,038	124.30	3,107.50	9,323	3.80	95.00	285
Medium Density Residential	11.00	66.00	726.00	2,178	155.50	1,710.50	5,132	89.50	984.50	2,954
Low Density Residential	5.00	2,285.00	11,426.00	34,275	2,654.75	13,273.75	39,821	369.75	1,848.75	5,546
Very Low Density Residential	1.50	9,033.00	13,549.50	40,649	3,003.75	4,505.63	13,517	-6,029.25	-8,356.58	-27,132
Manufacturing	0.40	183.50	3,197,304.00		158.85	2,767,802.40		-24.65	-429,501.60	
Business Park	0.30	1,313.50	17,164,818.00		1,621.55	21,190,415.40		308.05	4,025,597.40	
Commercial	0.30	586.00	7,657,848.00		906.35	11,844,181.80		320.35	4,186,333.80	
Downtown (Mixed Use)	1.50	-	-		71.05	4,642,407.00		71.05	4,642,407.00	
Commercial Transition	0.25	5.35	58,261.50		5.35	58,261.50		0.00	0.00	
CAADC (See Detail on Separate Sheet)		2,494.00	4,550,896.15		2,494.00	4,550,896.15		0.00	0.00	
Park	0.05	242.50	528,165.00		214.65	467,507.70		-27.85	-60,657.30	
Recreation	0.05	123.00	267,894.00		123.00	267,894.00		0.00	0.00	
Agriculture/Area of Interest		-	-		10,017.20	-		10,017.20		
Urban Reserve (BP)		-	-		1,302.80	-		1,302.80	0.00	
Urban Reserve		-	-		4,562.30	-		4,562.30	0.00	
Franklin/Beechwood RRC (See Detail)		-	-		712.00	-		712.00	0.00	
Institutional	0.35	94.50	1,440,747.00		92.00	1,402,632.00		-2.50	-38,115.00	
School	0.35	274.00	4,177,404.00		277.30	4,227,715.80		3.30	50,311.80	
Path		-	-		-	-		0.00	0.00	
County "X"		1,443.50	-		-	-		-1,443.50	0.00	
Total		18,316.35		86,139	28,547.20		67,792	10,230.85		-18,347

Factors used to calculate dwelling units per gross acre and/or building intensity in square feet for non-residential development (FAR) are based upon an "average" of the permitted density range for residential categories and a "typical FAR" rather than maximum FAR. All figures have been calculated based upon gross acreage. Dwelling unit figures are noted in bold font.

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TABLE 4.1-4
LAND USE AND ZONING COMPATIBILITY CHART
PROPOSED LAND USE DIAGRAM

Land Use Designation	Zoning District(s)
Very Low Density Residential	RE, PD
Low Density Residential	R1 (10), R1(8), R1(6), R1(5), PD
Medium Density Residential	R1(4), R2, R1(3), R3(2.5), PD
High Density Residential	R3(2), R3(1.5), R3(1), PD
Residential Transition	RT
Commercial Transition	RT
Downtown Mixed Use	To Be Developed
Commercial	CO, CN, CC, CT, CG
Manufacturing	M1, M2
Business Park	BP Overlay
CAADC	Mixed, BP Overlay
Institutional	All Districts w/ UP
School	All Districts w/ UP
Park	OS
Recreation	OS
Urban Reserve	Merced Co. Ag and Open Space Zones
Urban Reserve/Business Park	Merced Co. Ag and Open Space Zones
Agricultural/Area of Interest	Merced Co. Ag and Open Space Zones

**TABLE 4.1-5
GENERAL PLAN HOLDING CAPACITY
RESIDENTIAL LAND USES**

Land Use Designations	Assumed Typical Residential Density	Acres Designated (Gross)	Dwelling Units	Population ¹
Residential (dwelling unit per acre [du/a])				
Very Low Density Residential (du/a)	1.50 du/a	3,003.75	4,505.63	13,517
Low Density Residential	5.00 du/a	2,654.75	13,273.75	39,821
Medium Density Residential	11.00 du/ac	155.50	1,710.50	5,132
High Density Residential	25.00 du/a	124.30	3,107.50	9,323
Franklin-Beachwood (Estimate for Res.)	mixed	712.00 ²	245.00	735
TOTAL	N/A	6,650.3	22,842.38	68,528

¹ Assumes an average of 3.0 persons per dwelling unit.

² Of the 712.00 acres within the Franklin-Beachwood area, approximately 205.00 acres are specifically designated for various residential uses. Estimates given for dwelling units and population within Franklin-Beachwood are based on residentially designated acreage, not the total acreage of the community.

³ Separate residential acreage and build out information for the Community McSwain was not available at the time of the City's 2000 General Plan update. Therefore, the entire McSwain area has been combined into the Very Low Density Residential designation on the City's Land Use Diagram for purposes of estimating the number of dwelling units and population anticipated in that area.

NOTE: Development of mixed use projects within the Downtown (Mixed Use) and Residential Transition designations at an assumed rate 15 and 11 du/ac, respectively, for 30% of the total acreage available; as well as, potential residential development under existing Merced County agricultural designations at an assumed average of one dwelling unit per 40 acres, would increase the potential build-out population by approximately 2,217 persons.

**TABLE 4.1-6
GENERAL PLAN HOLDING CAPACITY
NON-RESIDENTIAL LAND USES**

Land Use Designations	Assumed Typical Comm./Ind. Floor Area Ratio	Acres Designated (Gross)	Assumed Comm./Ind. Square Footage	Estimated Employees
Commercial				
Residential Transition	0.30	50.50	659,934.00	659.00
Commercial Transition	0.25	5.35	58,261.50	58.00
Downtown Mixed Use	1.50	71.05	4,642,407.00	3,094.00
Commercial	0.30	906.35	11,844,181.80	7,896.00
Industrial				
Manufacturing	0.40	158.85	2,767,802.40	2,768.00
Business Park	0.30	1621.55	21,190,415.40	21,190.00
CAADC	Mixed	2,494.00	4,550,896.15	7,500.00
Other				
Institutional	0.35	92.00	1,402,632.00	561.00
School	0.35	277.30	4,227,715.80	2,818.00
Park	0.05	214.65	467,507.70	47.00
Recreation	0.05	123.00	267,894.00	53.00
Urban Reserve	--	4,562.30	--	--
Urban Reserve / Business Park	--	1,302.80	--	--
Agricultural/Area of Interest	--	10,017.20	--	--
TOTAL	n/a	21,896.90		

Mitigation

The following General Plan goals, policies, and implementation programs (detailed above) substantially mitigate Impact 4.2-1: LU-1, LU-1.1, LU 1.2, LU-1.b, LU-1.c, LU-2, LU 2.1, LU 2.2, LU-2.a, LU-2.b, LU-4, LU-4.1, LU-4.a, LU-4.b, LU-4.c, LU-5, LU-5.1, LU-5.a, LU-5.b, LU-5.c, LU-10, LU-10.1, LU-10.2, LU-10.3, LU 10.a, LU-11, LU-11.1, LU-11.2, LU-11.3, LU-12, LU-12.1, LU-12.a, LU-13, LU-13.1, LU-13.a, LU-14, LU-14.1, LU-14.2, LU 14.a, LU-15, LU-15.1, LU-15.2, LU-15.a, and LU-15.b.

Additional mitigation is provided below:

MM 4.1-1a: Concurrent with project application submittals, the City shall ensure that such proposals are evaluated for potential project impacts upon surrounding development patterns and land uses, and that such projects are consistent with the General Plan by providing appropriate buffers and transitions.

Timing/Implementation: Prior to individual project approval(s).

Enforcement/Monitoring: City of Atwater Planning Department.

Significance After Mitigation

Implementation of the identified General Plan policies, and **MM 4.2-1a** would reduce **Impact 4.1-1** to **less than significant**, by requiring appropriate analysis and review of potential impacts prior to the establishment of project-specific land uses.

Impact 4.1-2 The Draft Plan allows for development that has the potential to conflict with existing land uses or cause a substantial adverse change in the types or intensity of existing land use patterns. This land use change is considered a **significant impact** to the existing and surrounding land uses.

As noted above, the majority of the City is located north of SR 99. The General Plan revision includes focused development of lands south of SR 99. This development has the potential to not only affect existing communities south of SR 99, but also the potential to conflict with existing land uses and change the type or intensity of land use patterns.

Mitigation

In addition to the goals, policies and implementation programs listed in conjunction with **Impact 4.1-1**, **CO-10**, **CO-10.1**, **CO-10.2** and **CO-10.a** substantially mitigate **Impact 4.1-2**.

Significance After Mitigation

Implementation of the above-listed goals, policies and implementation programs, specifically LU-9, LU-9.2, LU-15, LU-15.1, LU-15.2, LU-15.a, and LU-15.b would reduce **Impact 4.1-2** to less than significant.

Impact 4.1-3 The proposed General Plan revision allows for development that may conflict with existing agricultural operations. This is a potentially **significant impact**.

Projects located in proximity to agricultural lands often generate a number of incompatible land uses. Residents of developments adjacent to agricultural operations may experience nuisances such as dust, noise, or odors. Pumping water for agricultural irrigation often draws on the local water table, thereby having the potential to adversely effect residential wells. Farmers and ranchers may be impacted if dogs disturb or kill livestock.

Mitigation

In addition to the goals, policies, and implementation programs listed above, specifically LU-13, LU-13.1, LU-13.a, LU-14, LU 14.1, LU 14.2, and LU 14.a, CO-4, CO-4.1 and CO-4.a substantially mitigate **Impact 4.1-3**. Additional mitigation is offered below:

MM 4.1-3a Where potential conflict exists, tentative map project applicants shall be conditioned to provide the following disclosure statement to future project residents prior to purchase of homes:

“If your property is adjacent to property used for agricultural operations, you may be subject to inconveniences or discomforts from such operations on a 24-hour basis. Discomforts may include, but shall not be limited to, noise, odors from manure or chemicals, and dust or smoke.”

Timing/Implementation: Prior to approval of any tentative map for residential development.

Enforcement/Monitoring: City of Atwater Planning Department.

MM 4.1-3b The City shall consider on a project-by-project basis the utilization of natural or man-made buffers to reduce potential conflict between active agricultural operations and residential development.

Timing/Implementation: Prior to approval of any tentative map for residential development.

Enforcement/Monitoring: City of Atwater Planning Department.

Significance After Mitigation

Implementation of the above-listed goals, policies and implementation programs and **MM 4.1-3a** and **MM 4.1-3b** will reduce **Impact 4.1-3** to less than significant by ensuring that potential conflicts between active agricultural operations and proposed development are fully considered during the review process.

Compatibility with Existing Plans and Policies

Concurrent development of the proposed General Plan revision and draft EIR ensures that all existing plans and policies be considered. In addition, the proposed General Plan revision offers goals, policies and implementation programs designed to not only reduce the impact of future growth, but also to establish and/or clarify the relationship between the proposed plan and existing programs. These include **LU-12, LU-12.1, LU-12.a, LU-16, LU-16.1, LU-6.2, and LU 16.3**. Therefore, this impact is **less than significant**.

Conversion of Agricultural Land

Impact 4.1-4 The proposed General Plan revision has the potential to allow the conversion of agricultural land to non-agricultural uses. This land use change is considered a **significant unavoidable impact** that cannot be fully mitigated.

Agricultural production has traditionally been a strong sector of Merced County's economy, and an important component of its character. Conversion of agricultural land can also reduce other resource values such as wildlife habitat. As elsewhere, agricultural lands in Merced County are increasingly subject to pressure for conversion to non-agricultural development. Rising costs of agricultural production and diminishing prices puts considerable pressure on the property owner. It is impossible, however, to fully compensate for the loss of habitat, grazing land, or crop land.

The proposed General Plan revision addresses the issue of agricultural land preservation with a number of goals, policies and implementation programs. When conversion of agricultural lands may be warranted, the proposed General Plan revision contains policies and procedures to support limitations of approved conversions. These policies, detailed above, however, cannot fully prevent the conversion of agricultural land.

Mitigation

The following goals, policies and implementation programs of the proposed General Plan revision substantially mitigate **Impact 4.1-3: LU-6, LU-6.1, LU-6.a, LU-9, LU-9.1, LU-9.2, LU-9.a, LU-10, LU-10.2, LU-10.3, LU-10.a LU-13, LU-13.1, and LU-13.a.**

Significance After Mitigation

These policies include ways in which the premature conversion of agricultural land can be avoided, including the ranking of soils based on production value, coordination with agencies that manage public lands, management, and, perhaps most importantly, detailed environmental review on a case-by-case basis. While this will ensure that decisions are made after careful consideration of the impacts, there is no mitigation available that will fully compensate for the conversion of agricultural land. Therefore, Impact 4.1-4 remains **significant and unavoidable**.

SECTION 4.2

HUMAN HEALTH/RISK OF UPSET

4.2 HUMAN HEALTH/RISK OF UPSET

This section addresses the potential presence of hazardous materials and conditions within the project area, and analyzes the potential risk of such materials in proximity to proposed development and human activities. This section also presents a full discussion of the potential of human exposure to hazardous materials and conditions in the event of accident, explosion or other upset conditions. Existing problems related to hazardous materials include potential water and soil contamination, health hazards from existing or historic land uses that use or generate these materials, and from the improper disposal of these materials by business, industry, or individual households.

4.2.1 EXISTING SETTING

HAZARDOUS MATERIALS DEFINED

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) as:

“A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics may either (1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed” (California Code of Regulations, Title 22, Section 66260.10)”

Chemical and physical properties cause a substance to be considered hazardous, including the properties of toxicity, ignitability, corrosivity, and reactivity. Toxicity, ignitability, corrosivity, and reactivity are defined in the CCR, Title 22, Sections 66261.20-66261.24.

Hazardous materials consist of "injurious substances", which include flammable liquids and gases, poisons, corrosives, explosives, oxidizers, radioactive materials, and medical supplies and waste. These materials are either generated or used by various commercial and industrial activities. They are also commonly transported over major highways and railroads. Hazardous wastes are injurious substances that have been or will be disposed.

Factors that influence the health effects of exposure to hazardous materials include the amount to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

PROJECT SETTING

As noted in Sections 3.0 and 4.1, the General Plan Planning Area consists of 44.6 acres, including all the land in city corporate limits, the Sphere of Influence, and other adjacent unincorporated areas.

4.2 HUMAN HEALTH/RISK OF UPSET

Most of the land within the corporate limits and Sphere of Influence is already developed or planned for development. Also included is the 3,566-acre former Castle Air Force Base. The majority of the remainder of the Planning Area includes lands that have been or are in active agricultural production.

EXISTING HAZARDOUS CONDITIONS

California Department of Toxic Substances Control

The California Department of Toxic Substances Control maintains the Hazardous Waste Information System, which keeps records of hazardous waste generators in the state. Facilities with an EPA identification number are on file in this system.

Sixteen sites with Atwater addresses are listed in the state records. However, some of these sites are actually located outside the city limits. Some of the wastes include photochemical/photo processing waste, oil-containing wastes and oxygenated solvents.

Merced County Health Department

The Merced County Health Department has a list of Atwater businesses that are state-regulated hazardous waste generators. There are 77 businesses that are listed, with 18 of them located in the unincorporated area. The most frequently listed businesses are service stations, automobile repair shops, medical facilities and offices, manufacturing firms and food processors.

Castle Airport and Aviation Development Center

The CAADC site has been a place of particular concern for hazardous materials and waste. Past operations at the former Castle Air Force Base had commonly utilized aviation and motor fuels, motor oils and lubricants, hydraulic fluids, cleaning solvents, pesticides, paints and thinners. As of February 1995, 209 sites with soil contamination were identified for environmental remediation, of which 161 will require little or no action. Four sites were proceeding with remediation and another four are pending remediation. The remaining sites require further study before any decisions on cleanup are made. Hazardous sites are identified under the Air Force's Installation Restoration Program (IRP). There were 33 IRP sites at the former Castle Air Force Base, according to the *EIR for Castle Air Force Base Reuse Plan and Local Agency Military Base Recovery Area* (EIP, 1996). The Department of Defense will be responsible for the cleanup of these sites.

According to the Base Conversion Agency, a Draft Final Record of Decision (ROD) for the remediation program at Castle would be submitted to federal and state regulators with jurisdiction over the cleanup in October 1997. The ROD is a public document that explains what methods will be used to clean up the contaminated areas. After the ROD has been finalized, the full remediation program will be implemented.

Underground Storage Tanks

Because much of the Planning Area is located in unincorporated Merced County and has a history of agricultural production, it is likely that underground storage tanks have been utilized to provide propane and gasoline to rural residences and operations.

Asbestos Containing Materials

The Planning Area may include residences or other buildings that are potentially old enough to have been constructed with materials containing friable asbestos.

PCBs and Radon

Electrical transformers, which emit PCBs are located throughout the Planning Area. PCBs are organic chemicals, usually in the form of oil, that are used in electrical equipment, including transformers and capacitors, primarily as electrical insulators. Some PCB-containing fluorescent light ballasts may also be present in existing buildings. Nearly all ballasts manufactured prior to 1979 contain PCBs. PCB ballasts manufactured after July 1, 1978, that do not contain PCBs are required to be clearly marked "No PCBs". PCBs, which are highly persistent in the environment, can cause various human health effects, including liver injury, irritation of the skin and mucous membranes, and adverse reproductive effects. They are also a suspected human carcinogen. In California, PCB-containing materials must be disposed of as a hazardous waste.

The U.S. Environmental Protection Agency (EPA) and California EPA have conducted studies of radon risks throughout the state. Results of the study indicate that average statistical concentrations in Merced County are below the current EPA action level.

Agricultural Operations

Agricultural operations provide a number of sources of contamination, which may be present within the Planning Area. Livestock operations can release nitrates into the soils and groundwater. A history of row crops suggests that pesticides may have been used, thereby presenting another source of potential contamination. Vehicles may have also been maintained on agricultural land, resulting in the release of oil or other petroleum products, which too would be considered hazardous.

REGULATORY FRAMEWORK

Hazardous materials are subject to numerous laws and regulations at all levels of government. Most hazardous materials regulation and enforcement in Merced County is managed by the County Health Department, which refers large cases of hazardous materials contamination or violations to the

4.2 HUMAN HEALTH/RISK OF UPSET

Central Valley Regional Water Quality Control Board (RWQCB) and the state Department of Toxic Substances Control (DTSC).

Other agencies that may become involved in toxic regulation include the San Joaquin Valley Air Pollution Control District (SJVAPCD), and the federal and state Occupational Safety and Health Administrations (OSHA).

City of Atwater Emergency Plan

The City of Atwater Emergency Plan outlines the responsibilities for the management of hazardous material incidents. For incidents that occur on roadways, the on-scene management responsibility rests with the primary traffic investigative authority. Incidents taking place at locations other than roadways, such as industrial plants, will be managed by the City's Fire Department. All City agencies will support and assist the appropriate agency in charge of response. The Chief of Police will develop a hazardous materials incident response plan supported by other agencies.

Responsibility for day-to-day emergency response falls to the Atwater Police and Fire Departments, which are first responders in emergency situations. Under more extreme general emergency conditions, other City departments become involved, along with state, County and private agencies as needed. Response procedures are described in the City of Atwater Emergency Plan, dated November 1984. The Emergency Plan is in the process of being updated.

Critical Facilities

The state General Plan Guidelines define "critical facilities" as those "which either (1) provide emergency services or (2) house or serve many people who would be injured or killed in case of disaster damage to the facility. Examples include hospitals, fire stations, police and emergency services, utility facilities, and communications facilities." Although identification of critical facilities is not required by codes pertinent to the safety element, it serves a useful purpose. It singles out those facilities for which special maintenance plans and actions are necessary to ensure their ability to function during emergencies or to reduce the impairment of services provided by these facilities. Within the Atwater Planning Area, the following are considered critical facilities:

- Atwater Fire Department stations (Main and CAADC)
- Atwater Police Department building
- Atwater City Hall (colocated with Police Department)
- Merced County Fire Department Stations 82 (Atwater) and 88 (Winton)
- Water supply lines and wells
- Wastewater treatment plant, pumping stations and trunk lines

4.2 HUMAN HEALTH/RISK OF UPSET

Major electrical transmission lines and substations

Major communication lines and microwave transmission facilities

Critical facilities also include major roadways which may serve as principal evacuation routes. These are discussed in Section 4.3 (Traffic and Circulation).

Relevant Goals and Policies of the Proposed General Plan

GOAL SF-9. Prevent potential contamination and hazards resulting from the inappropriate storage, transport and handling of hazardous materials.

Policy SF-9.1. Require new development projects which produce, store, utilize or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.

Policy SF-9.2. Promote the routing of vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.

Policy SF-9.3. Encourage continued monitoring of hazardous material cleanup at the CAADC site, and monitoring of hazardous material use or storage at the site.

Implementation Program SF-9.a. Require that applications for projects that will generate hazardous wastes or utilize hazardous materials include detailed information regarding the types and volumes of hazardous materials that will be involved and plans for hazardous waste reduction, recycling and storage.

Implementation Program SF-9.b. Forward all proposed development projects which involve the manufacture, use and/or storage of hazardous materials to the Merced County Environmental Health Department, to ensure that all appropriate business and emergency plans are required and any other special requirements or mitigation measures are incorporated into conditions of approval for the project.

4.2.3 PROJECT IMPACTS AND MITIGATION

STANDARDS OF SIGNIFICANCE

For the purposes of this EIR, impacts are considered to be significant if the following could result from implementation of the proposed project.

4.2 HUMAN HEALTH/RISK OF UPSET

- 1) Exposure of people or property to hazards including airport operations, explosives, groundwater contamination or soil contamination; or,
- 2) The generation, transportation, storage, and handling of hazardous materials.

METHODOLOGY

This section analyzes the impacts associated with the potential risk of upset to hazardous substances and/or waste contamination that may exist on the project site. The analysis is based on known contamination sites, and the potential for contamination based on both previous and proposed land uses.

PROJECT IMPACTS

Exposure of People or Property

Impact 4.2-1 Implementation of the proposed General Plan Update may expose people or property to existing hazardous materials. This is considered a **significant** impact.

As noted above, at least 16 sites and 77 businesses are known to be contaminated or utilize hazardous materials. The potential also exists for groundwater or soil contamination from agricultural operations. Accordingly, underground storage tanks may be present on properties with a history of rural use. Many buildings that could be demolished may contain asbestos, and PCBs are a concern.

Mitigation

Implementation of the following provisions of the proposed general plan update will substantially reduce **Impact 4.2-1: SF-9, SF-9.2, and SF-9.3**. In addition, the following mitigation is provided;

MM 4.2-1a An inspection by a qualified environmental professional shall be required for all development applications which may be associated with hazardous materials or are known to have site contamination within the Planning Area deemed a "project" under CEQA to determine the presence of contamination and appropriate mitigation. If substances are detected at concentrations that could present a health risk, remediation of the affected areas shall be undertaken in accordance with the requirements of the Merced County Environmental Health Department, California Department of Toxic Substances Control and the Regional Water Quality Control Board.

4.2 HUMAN HEALTH/RISK OF UPSET

Timing/Implementation: Prior to approval of development plans.

Enforcement/Monitoring: City of Atwater Planning Department and Merced County Environmental Health Department.

Implementation of the above-listed goals and policies of the proposed General Plan Update and **MM 4.2-1a** will reduce **Impact 4.2-1** to **less than significant** by identifying sources of contamination prior to development, and incorporating appropriate remediation into development plans.

Handling of Hazardous Materials

Impact 4.2-2 Implementation of the proposed General Plan Update may include land uses that involve the generation, transportation or storage of hazardous materials. This is considered a **potentially significant impact**.

Some of the land uses allowed under the proposed land use designations could produce hazardous waste. In addition, hazardous wastes may be stored on-site, or may be required to be transported. An upset at the facility, or an accident during transport could expose people or property to dangerous levels of contaminants.

Mitigation

Implementation of the following provisions of the proposed general plan update will substantially reduce **Impact 4.2-2: SF-9, SF-9.1, SF-9.2, SF-9.3, SF-9.a and SF-9.b**.

Implementation of the above-listed goals, policies and implementation measures would reduce **Impact 4.2-2** to **less than significant** by requiring that proposed projects that could generate hazards include state-of-the-art equipment, and that all such projects receive proper review by the County Environmental Health Department.

SECTION 4.3

TRAFFIC AND CIRCULATION

This section discusses and analyzes traffic impacts associated with build-out of the Atwater General Plan as proposed by this project. The analysis provided by this section is based on a circulation study conducted by Valley Research and Planning Associates (VRPA) and a comparison of the existing Circulation Element and the Circulation Element proposed by the General Plan Update.

4.3.1 EXISTING SETTING

The City of Atwater's transportation system is composed of one State Route and numerous County and City routes. It is also composed of a county-wide public transit system, called The Bus, as well as paratransit and rail services. Travel within the City is a function of the size and spatial distribution of population and economic activity. It is also influenced by the relationship to other major activity centers within Merced County such as Merced, Los Banos, Livingston and Gustine, and more distant urban centers such as Los Angeles, Fresno, Stockton and the Bay Area.

Due to the interrelationship of urban and rural activities (employment, housing and services) and the low average density of land uses, the private automobile is the dominant mode of travel for residents in the City of Atwater. Public transportation, where service is available, is utilized primarily by a transit-dependent population (e.g., the elderly, students, low-income residents, and the physically handicapped) that generally does not have access to automobiles. The agricultural economy of the County depends on safe and efficient goods movement. The County is responsible for maintaining an extensive network of low volume farm-to-market roads in sparsely settled areas to service the agricultural industry.

The primary generators of truck traffic in the City are agricultural and industrial uses. Since agriculture is a relatively mature industry in the City, overall truck traffic generated by agricultural uses should remain stable in the future. However, relocation and replacement of individual agricultural processing plants and other new industries can significantly alter both regional and localized patterns and concentrations of truck traffic within the City's Sphere of Influence. As healthy industrial growth is expected within the City, the scale of industrial-related truck traffic will continue to increase. According to the Merced County 1998 Regional Transportation Plan (RTP), truck traffic along SR 99 includes approximately 20 to 30 percent of all traffic.

Non-motorized forms of transportation are also present in the City of Atwater include bikeways, pedestrian facilities, and equestrian amenities.

ROADWAYS

Figure 4.3-1 illustrates City of Atwater's relationship to the State highway system, nearby counties and major cities. **Figure 4.3-2** identifies the designated street and highway network contained in the current Circulation Element adopted by the City in 1992. It provides a definition of roads of City wide significance. The City's highway network consists of State Route (SR) 99. Prominent City

roadways include: Atwater Boulevard, Bellevue Road, Winton Way, Applegate Road, Buhach Road, Broadway, Shaffer Road, First Street and Third Street. Outside the city limits, State Highway 140 forms the southern boundary of the Planning Area, and State Highway 59 forms part of the Planning Area's eastern boundary. Santa Fe Drive, a northwest-southeast route between Merced and Winton, passes through the northeast portion of the City by the CAADC site. The roadway serves as a major access route to the former Castle Air Force Base for workers living in the Merced area.

The City is linked to Merced and Sacramento principally by SR 99. This route provides the only continuous northwesterly-southeasterly route through the City and is heavily used for regional travel. SR 99 is constructed to freeway standards. The total number of highway miles within the City includes approximately two miles of State highways.

Functional Classification

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently in any major way as, most travel involves movement through a network of roads.

To identify roadway infrastructure needs for the City to Year 2020 and beyond, several broad roadway classifications were identified during the General Plan Update process. These roadway classifications are sufficient to identify roadway infrastructure needs from the City's perspective, and are consistent with functional classifications as defined by the Federal Highways Administration (FHWA) and California Department of Transportation (Caltrans).

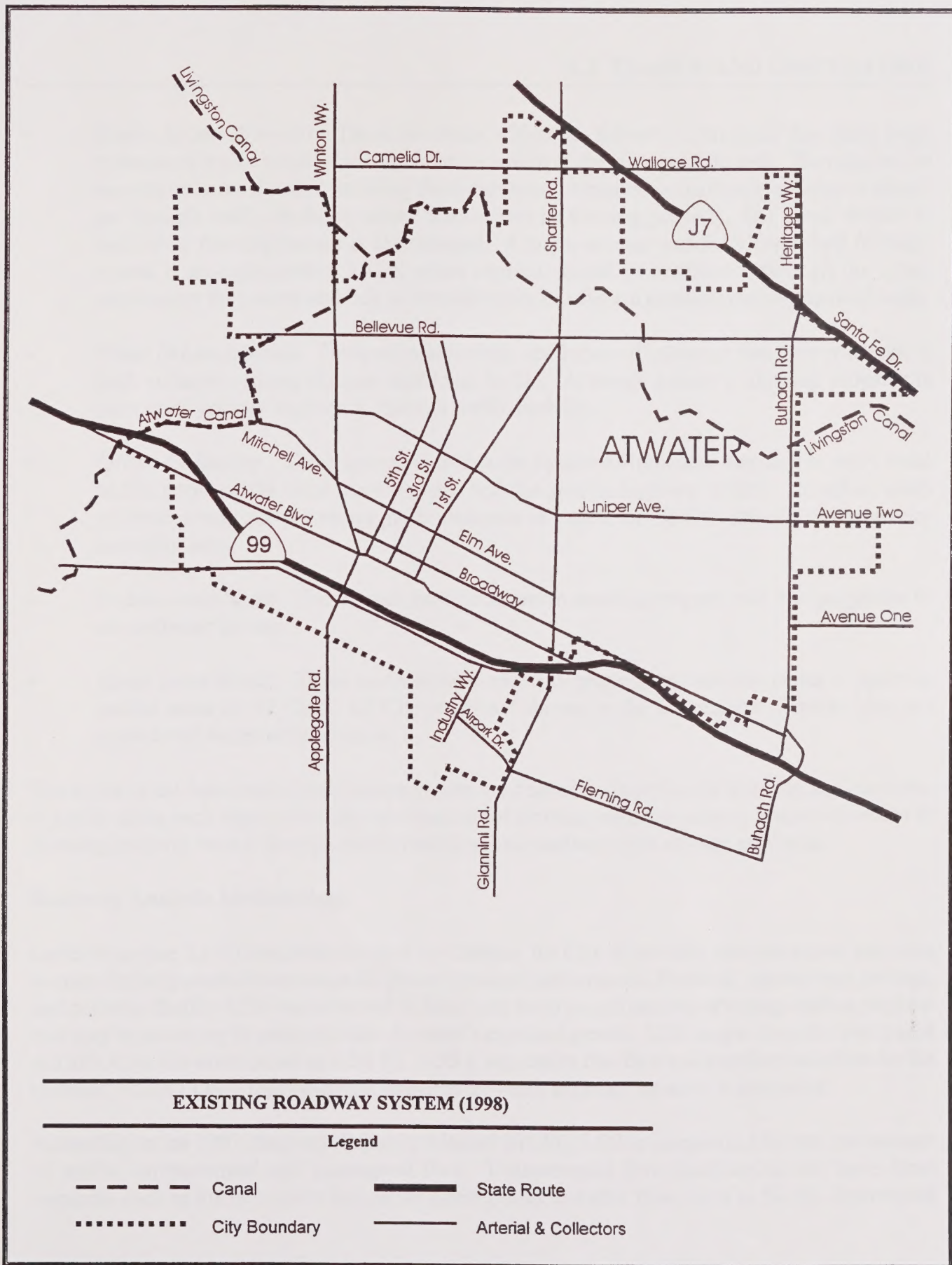
- *Freeways.* A freeway is a divided, limited access highway (access is provided at grade separated interchanges and vehicular crossing of these facilities is provided at grade separations). Freeways are designed to carry large volumes of traffic traveling long distances, although localized use of freeways in urban areas is considerable.
- *Expressways.* These roads carry traffic for relatively long distances (three miles or longer) and provide direct access to the freeway system. Access from driveways and minor side streets is restricted. Major cross street intersections are signalized. Major intersection spacing ranges from one-half mile or more.



ATWATER WITHIN THE MERCED COUNTY REGION

Legend

- State Route
- Arterial & Collectors



- *Major Urban Arterials.* These are roads within the Sphere of Influence that carry large volumes of traffic relatively long distances within or through an urban area. They also serve considerable local traffic traveling short distances. Along these roadways, priority is placed on through traffic mobility rather than access to fronting property, and direct access to individual fronting parcels is discouraged. A major arterial with fully controlled frontage access is an expressway. Major urban arterials should be continuous through the urban community they serve and link to arterial routes in adjacent communities or the rural areas.
- *Other Urban Arterials.* These are roads within the Sphere of Influence that carry moderately high volumes of long distance and local traffic. Although access to abutting property is permitted, priority is given to through traffic mobility.
- *Urban Collectors.* These are roads within the Sphere of Influence intended to carry local traffic between the local street system and the arterial highway system. In urban areas collectors may serve average daily volumes in excess of 10,000 although volumes are normally less.
- *Urban Local Roads.* These roads provide access to abutting property and link properties to the collector system.
- *Rural Local Roads.* These roads provide access to property and activity nodes in sparsely settled areas of the City. All City roads not shown on the Circulation Element Map are considered standard local roads.

The intent of the functional classification system used here is to describe the intensity and character of traffic using each type of facility, the character of abutting uses, the priority placed on access to abutting property versus through traffic mobility, and roadway right-of-way standards.

Roadway Analysis Methodology

Level of service (LOS) standards are used by Caltrans, the City of Atwater, and other local agencies to quantitatively assess the street and highway system's performance. Freeway, expressway, arterial, and collector facility LOS was assessed to determine the type and number of transportation projects that may be necessary to accommodate Atwater's expected growth. LOS ranges from the best (rated as LOS A) to the worst (rated as LOS F). LOS A represents free flow and excellent comfort for the motorist, while LOS F represents the situation in which highway capacity is exceeded.

According to the 1997 Highway Capacity Manual (HCM), LOS is categorized by two parameters of traffic, uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow, such as SR 99. Interrupted

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flow facilities have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections along arterial roads (e.g., Winton Way and Bellevue) and other arterial and collector streets within City of Atwater. Uninterrupted and interrupted flow LOS is further defined in **Table 4.3-1** and **Table 4.3-2**.

To maintain acceptable levels of service along the City's highways, streets, and roads network, Caltrans and other local agencies adopt minimum levels of service in an attempt to control congestion that may result as new development occurs. The goal is to maintain acceptable levels of service along the highways, streets, and roads network. For purposes of this analysis, a minimum LOS of D was assumed along the City of Atwater street and highway system.

TABLE 4.3-1
UNINTERRUPTED TRAFFIC FLOW FACILITIES LEVEL OF SERVICE

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop-and-go waves, and they are extremely unstable.

Source: 1997 Highway Capacity Manual

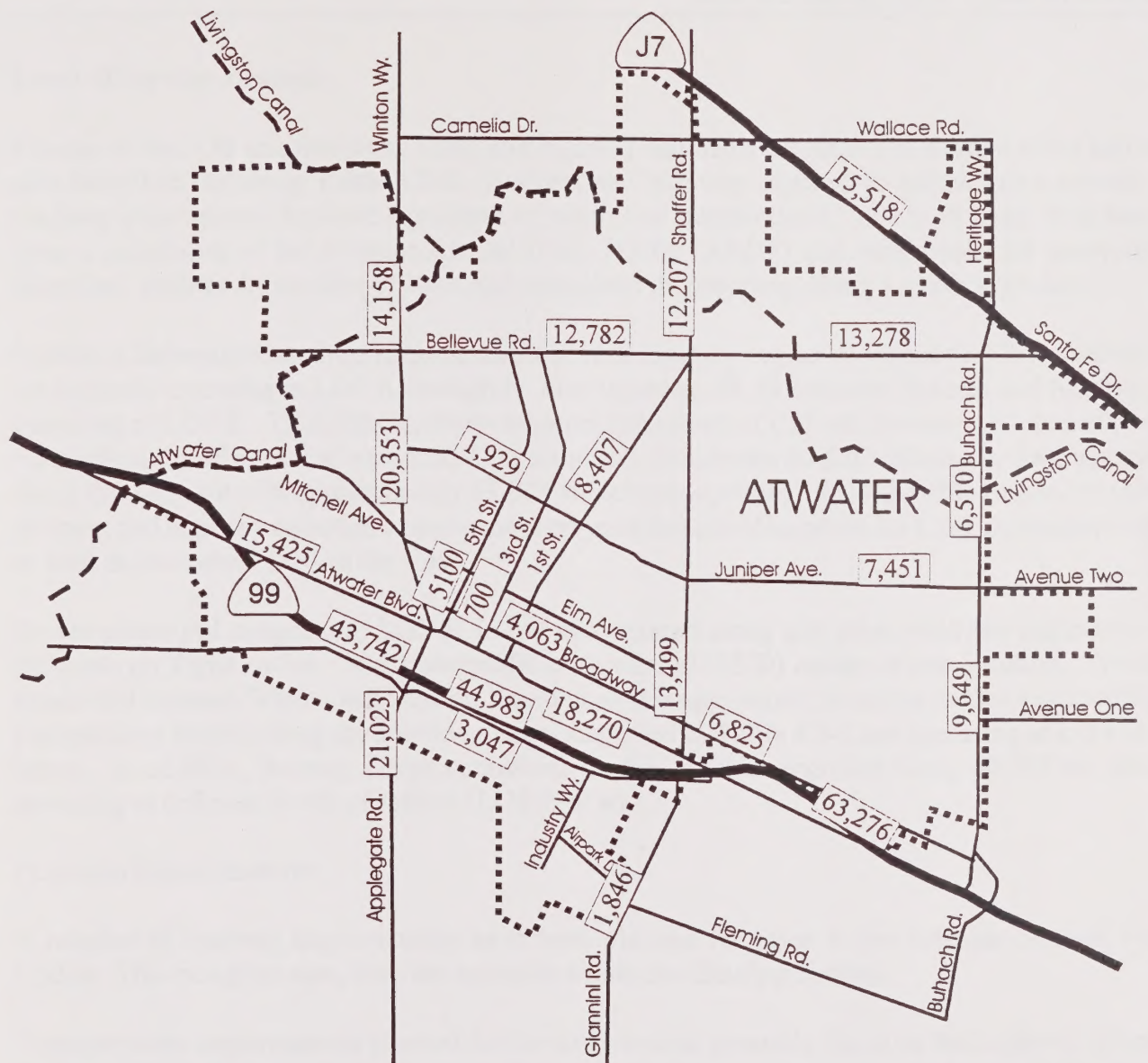
TABLE 4.3-2
INTERRUPTED TRAFFIC FLOW FACILITIES LEVEL OF SERVICE

Level of Service	Definition
A	Describes operations with average intersection stopped delay of five seconds or less (how long a driver must wait at a signal before the vehicle can begin moving again).
B	Describes operations with average intersection stopped delay in the range of 5.1 to 15.0 seconds per vehicle, and with reasonably unimpeded operations between intersections.
C	Describes operations with higher average stopped delays at intersections (in the range of 15.1 to 25.0 seconds per vehicle). The stable operations between locations may be restricted given the ability to maneuver and change lanes at mid-block locations. These conditions can be more restrictive than LOS B. Further, the longer queues and/or adverse signal coordination may contribute to lower average speeds.
D	Describes operations where the influence of delay is more noticeable (25.1 to 40.0 seconds per vehicle). Intersection stopped delay is longer and the range of travel speed is about 40 percent below the free flow speed. This is caused by inappropriate signal timing, high volumes, and some combinations of both.
E	Is characterized by significant approach stopped delay (40.1 to 60.0 seconds per vehicle), and average travel speeds of one-third the free flow speed or lower. These conditions are generally considered to represent the capacity of the intersection or arterial.
F	Characterizes arterial flow at extremely low speeds, with high intersection stopped delay (greater than 60 seconds per vehicle). Poor progression, long cycle lengths, and high traffic demand volumes may be a major contributing factor to this condition. Traffic may be characterized by frequent stop-and-go conditions.

Source: 1997 Highway Capacity Manual

To determine the existing LOS for each segment along the street and highway network, segment LOS was estimated using the Modified HCM-Based LOS Tables ("Florida Tables"). The Florida Tables consider the capacity of individual street and highway segments based on numerous roadway variables: design speed, signalized intersections per mile, number of lanes, and saturation flow. These variables were identified and applied to reflect existing traffic LOS conditions in the study area. A complete description of the Modified Tables and the variables applied to calculate segment LOS is included in the *Appendix A*.

Existing traffic volumes were used to develop LOS calculations were obtained from MCAG, the City of Atwater, and various local agencies. Traffic volumes were available from these agencies for years 1990 through 1998. To reflect 1998 traffic along the existing street and highway system in the City, traffic counts from years other than 1998 were adjusted by three percent per year. **Figure 4.3-3** shows the traffic counts for segments of the City's street and highway system.



EXISTING (1998) AVERAGE DAILY TRAFFIC (ADT)

Legend

- | | | | |
|-------|---------------|------|-----------------------|
| ----- | Canal | ———— | State Route |
| | City Boundary | ———— | Arterial & Collectors |

FIGURE 4.3-3
EXISTING (1998) AVERAGE DAILY TRAFFIC (ADT)

Level of Service Analysis

Results of the LOS analysis along street and highway segments are shown in **Figure 4.3-4** and are also described further in **Table 4.3-3**. A street and highway segment is defined as a stretch of roadway often located between signalized or controlled intersections. The LOS analysis is based upon a calculation of the Average Annual Daily Traffic (AADT) and other variables previously described, such as the number of lanes and signalized intersections along a street segment.

Results of the segment analysis indicate that street and highway segments within the City of Atwater are currently operating at LOS A through F. One segment, SR 99 between Buhach and Shaffer, is operating at LOS F. Thus, this highway segment falls short of City of Atwater's, Caltrans', and other affected local agencies' minimum LOS standards. Maximum AADT volumes in the City occur along this segment with approximately 63,276 vehicle trips per day. This identifies a need to focus on street and highway and other improvement projects that could improve the LOS on that segment, as well as the overall LOS in the City.

Severe prolonged congestion, LOS E, is not encountered along any other roadway segments, as indicated on **Figure 4.3-4**. Moderate traffic congestion (LOS D) occurs at one location, Atwater Boulevard between Winton and Shaffer. Based upon this assessment, it can be further assumed that intersections located along the street segments identified in **Table 4.3-3** are operating at LOS D or better. In addition, freeway ramps connecting to the deficient segment along SR 99 are likely operating at deficient levels of service (LOS E or F).

PLANNED IMPROVEMENTS

A number of roadway improvements have been planned for prior to the Atwater General Plan Update. This being the case, they are included within the Existing Setting.

Transportation improvements planned for the Atwater area generally focus on the highway system, and are part of a larger project to improve the regional transportation network. As noted elsewhere in this report, population in Atwater and Merced is expected to increase, meaning a larger number of vehicles will be using the local roads. Also, the new University of California (UC) campus and continued reuse of the former Castle Air Force Base will place additional demands on the existing roadway system.

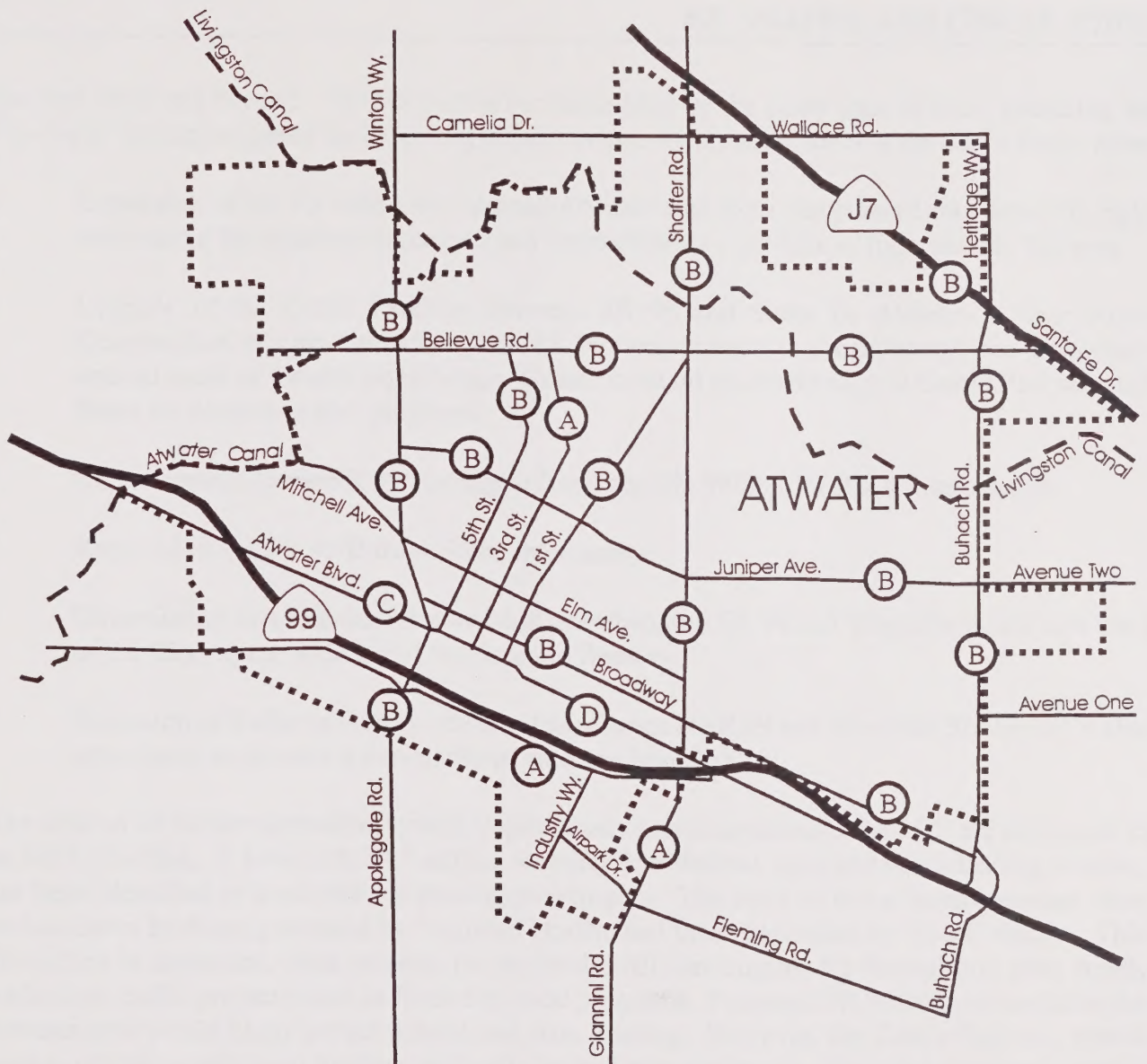
In 1997, MCAG adopted the *State Route 99 Merced/Atwater Corridor Major Investment Study*. The Major Investment Study (MIS) was prepared in compliance with federal requirements for additional study of subareas or corridors where investments in transportation improvements are contemplated. The corridor under study was the section of SR 99 that passes through Atwater and Merced. Proposed investments are intended to enhance the capacity of SR 99 and connecting roadways for

4.3 TRAFFIC AND CIRCULATION

TABLE 4.3-3
CITY OF ATWATER EXISTING SEGMENT LOS ANALYSIS

Roadway Segment	Limits	Existing Conditions (1998)			
		# of Lanes	Facility Type	LOS	AADT ¹
SR 99	Buhach - Shaffer	4	Freeway	F	63,300
SR 99	Shaffer - Winton	4	Freeway	C	45,000
SR 99	Winton - NW City Limits	4	Freeway	C	43,700
1st Street	Atwater - Bellevue	4	Arterial	B	8,400
Applegate Road	S City Limits - Atwater	4	Arterial	B	21,000
Atwater Boulevard	Wedel - Winton	2	Arterial	C	15,400
	Winton - Shaffer	2	Arterial	D	18,300
Bellevue Road	Gibson - Shaffer	4	Arterial	B	12,800
	Shaffer - Santa Fe	4	Arterial	B	13,300
Broadway	Winton - Shaffer	2	Arterial	B	4,000
	Shaffer - 99 (to the south)	2	Arterial	B	6,800
Buhach Road	Broadway - Juniper	4	Arterial	B	9,600
	Juniper - Santa Fe	4	Arterial	B	6,500
Santa Fe Drive	Bellevue - Shaffer	4	Arterial	B	15,500
Shaffer Road	Atwater - Bellevue	4	Arterial	B	13,500
	Bellevue - Santa Fe	4	Arterial	B	12,200
Winton Way	Atwater - Bellevue	4	Arterial	B	20,400
	Bellevue - N City Limits	4	Arterial	B	14,200
Third Street	Atwater - Bellevue	2	Collector	A	700
Fifth Street	Atwater - Bellevue	2	Collector	B	5,100
Commerce Avenue	Applegate - Industry	2	Collector	A	3,000
Giannini Road	Atwater Jordan - Commerce	2	Collector	A	1,800
Juniper Avenue	Winton - Shaffer	2	Collector	B	1,900
Juniper Avenue	Shaffer - Buhach	2	Collector	B	7,500

LOS - Level of service, AADT - Annual average daily traffic (AADT figures rounded to nearest hundred).



EXISTING (1998) LEVEL OF SERVICE (LOS)

Legend

- | | | | |
|-------|---------------|-----|-----------------------|
| --- | Canal | — | State Route |
| | City Boundary | — | Arterial & Collectors |
| | | (B) | Level of Service |

4.3 TRAFFIC AND CIRCULATION

the year 2020 and beyond. The alternative recommended by the study (one of four, including the “no-build” option) suggests the following improvements within or adjacent to the City's Study Area:

- Expansion of SR 99 within the Merced/Atwater area from the present four lanes to eight lanes along the existing alignment, and connection to a six-lane system outside the area.
- Upgrade of the Castle Parkway between SR 99 and Santa Fe Avenue to four lanes. Construction of a new interchange on SR 99 that connects to the parkway, and a two-lane arterial south of the new interchange. Construction of an interchange at Castle Parkway and Santa Fe Avenue is also proposed.
- Improvements to the SR 99/Applegate Road and SR 99/Shaffer Road interchanges.
- Removal of the SR 99/Buhach Road interchange.
- Construction of a four-lane freeway and interchange at SR 99 and Westside Boulevard west of the City. Later addition of two lanes to freeway.
- Extension of Bellevue Road to the new interchange at SR 99 and Westside Boulevard is also anticipated to provide a new northern entrance into the City.

The costs of all the transportation system improvements recommended in the MIS are estimated to be \$403.6 million. A total of \$139.7 million, coming from federal, state and local funding sources, has been identified as available for these improvements. The costs of these improvements were broken down by those generated by “regional” traffic and those generated by “local” traffic. This distinction is important, since projects for regional traffic are eligible for federal and state funds, while local traffic projects must be funded by local programs. Proposed SR 99 improvements in the Atwater area would likely attract federal and state funding. However, the Castle Parkway would have to rely on mostly local funding, with only limited state assistance. The total estimated cost for the Castle Parkway project is \$13 million. Among the implementation measures contained in the MIS is the placement of a half-cent transportation sales tax measure on the ballot and the development of a county-wide impact fee system. These measures are considered to provide the most equitable means of funding the local share of projects.

The MIS Report is the most recent document that has been produced, which provides an overview of anticipated regional projects including those associated with development of the University Access System. Development of these improvements will be pursued by the City of Atwater. The City will also continue to coordinate with Caltrans and MCAG as future plans are developed or refined. The City's Circulation Element may also be augmented or modified as necessary on a periodic basis to incorporate improvements that are identified in future studies and plans that are adopted on a regional basis.

The Preferred Land Use Alternative introduces additional areas of commercial and business park land uses just east of Atwater's city limits. Between SR 99 and Santa Fe Drive, Castle Parkway is classified as a four lane expressway, therefore, access will be limited in accordance with this functional classification. The trips generated by the new land uses adjacent to the expressway will be serviced by frontage roads and will ultimately access the Parkway via the primary east-west corridors in the area.

TRANSIT SERVICES AND FACILITIES

Fixed-Route and On-Demand Public Transit

The City of Atwater is a part of the public transit system called Merced County Transit, also known as The Bus. The Bus is Merced County's only county-wide provider of public transit service. The Bus provides basic public transportation service to seventeen cities and communities in Merced County, including Atwater. **Figure 4.3-5** illustrates the existing fixed transit routes in Atwater. Two bus routes serve the City. One route goes from Santa Fe Drive to the downtown along Broadway Avenue before turning north on Winton Way. The other route also starts from Santa Fe Drive, then runs along Bellevue Road before reaching Winton Way. Both routes stop in Merced and Winton, and one route continues on to Livingston. Connections can be made to other Merced County communities.

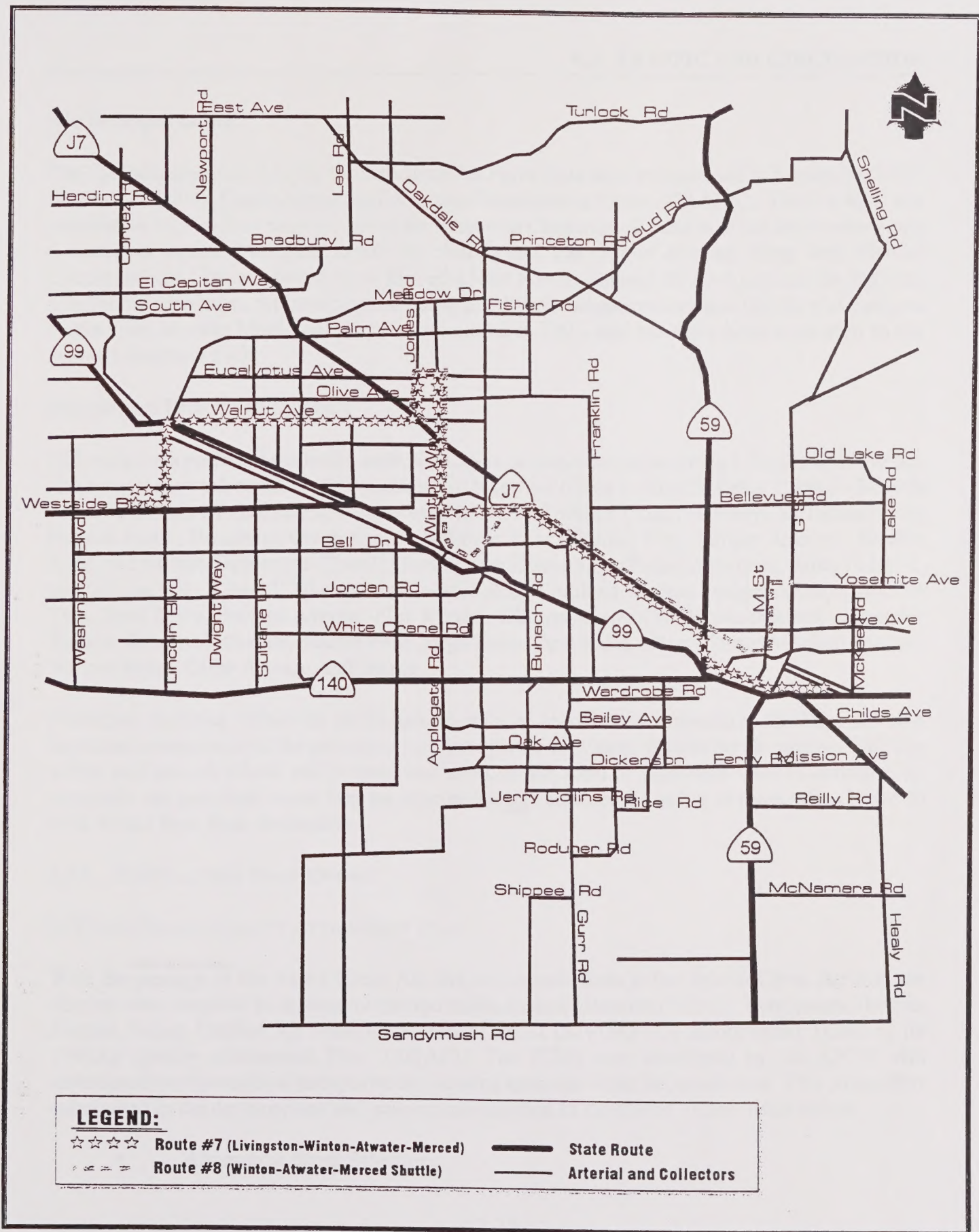
Greyhound Bus Lines provides bus service from Atwater to state and national destinations to the north and south. There is no terminal in the City; the nearest one is in Merced. A "flag" stop does exist in the City, where buses will stop if passengers are present.

The City also provides a dial-a-ride paratransit service.

Rail Transportation

The Union Pacific Railroad, the Burlington Northern & Santa Fe Railroad (BN&SF), and the San Joaquin Valley Railroad all provide freight service to the City. They connect the City with major markets within California (the San Francisco Bay Area, Sacramento and Los Angeles) and to other destinations north and east. Freight terminals and service to specific industries are located throughout the City. There is no direct passenger rail service to the City. AMTRAK passenger service is available in nearby Merced.

There are several at-grade railroad crossings along existing streets and roads within the City of Atwater. Each of these crossings is controlled by crossing equipment maintained by the affected railroad. Intersection control equipment and/or signage is maintained by the city of Atwater and/or County of Merced.



Air Transportation

The City obtained access to the former Castle Air Force Base after it was closed in September 1995. It is now called the Castle Airport and Aviation Development Center (CAADC). The CAADC site contains an 11,800-foot runway, one of the longest in California. A portion of the site is now being operated as a general aviation airport for civilian use. The City of Atwater, along with Merced County and the City of Merced, have formed a Joint Powers Agency (JPA) to explore the different uses for the remainder, the most popular being as a diversified general aviation facility and business center. The Atwater Municipal Airport was closed in 1995, and has since been converted to the Atwater Business Park.

Bicycle and Pedestrian Systems

Although not a preferred mode of transit, the City is in the process of adopting a Regional Bike Plan. The bicycle network consists of three classes of bikeways (Class I - Bicycle Paths, Class II - Bicycle Lanes, and Class III - Bicycle Routes) as established by Caltrans. Class I bikeways are located along Buhach Road, Broadway/Green Sands, Bellevue Road, Winton Way, Juniper Avenue, Shaffer Road, and Atwater Boulevard. Class II bikeways are located along Railroad Avenue, Santa Fe Drive, and Winton Way. Class III bikeways are located along Fruitland Avenue, Juniper Avenue, Avenue Two, Terri Drive, Fortuna Avenue, Elm Avenue, Clinton Avenue, Bridgewater Street, Almador Terrace, Bromwell Avenue, Shaffer Road, High Street, First Street, Liberty Street, Mitchell Avenue, Willow Street, Olive Avenue, and Maple.

Pedestrian facilities within the immediate vicinity of schools and recreational facilities are also important components of the non-motorized transportation system. Pedestrian circulation facilities within and around school and recreational areas, in the form of sidewalks built to current City standards, are provided where they are appropriate and enhance the safety of those who choose to walk to and from their destination.

4.3.2 REGULATORY FRAMEWORK

SJVUAPCD AIR QUALITY ATTAINMENT PLAN

With the passage of the state's Clean Air Act and amendments to the federal Clean Air Act, air districts were required to implement transportation control measures (TCMs). In response, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) incorporated TCMs in its 1991 Air Quality Attainment Plan (AQAP). The TCMs were developed by the APCD with assistance from the regional transportation planning agencies within its jurisdiction. This joint effort culminated in the development and subsequent adoption of the eleven TCMs listed below:

- Alternative Work Schedules;

- Bicycling;
- Fleet Operators Alternate Fuels Program;
- Park-and Ride Lots;
- Parking Management;
- Passenger Rail;
- Public Transit;
- Rideshare Program;
- Telecommunications;
- Traffic Flow Improvements; and,
- Trip Reduction Programs.

MCAG REGIONAL TRANSPORTATION PLAN

After receiving comments from the California Air Resources Board (CARB) on the adopted TCMs in its AQAP, the SJVAPCD and regional transportation planning agencies prepared Phase I of the Valley-wide TCM Program. The program, adopted in 1994, intended to further describe how the TCMs will be implemented, monitored, and enforced. The TCM Program also identifies which TCMs are applicable to specific types of jurisdictions within the San Joaquin Valley. Various strategies and projects that function as TCMs have been implemented and are incorporated in the 1998 RTP update:

- *Rideshare Program:* The purpose is to decrease the number of solo drivers by promoting use of alternative means of transportation. This program provides regional ridesharing to service the counties of Merced and Mariposa. This program provides computerized client matching, employer outreach, and public awareness through an active marketing program.
- *Bicycle Program:* The purpose of this program is to divert travel to bicycle mode. Employees within the Merced County region are encouraged to bike to work on Bike to Work Day. Also, bicycle lane miles are added to local systems when needed in conformance with the Merced County Regional Bikeway Plan.
- *Traffic Flow Improvements:* Implementing these improvements increase vehicle speeds and reduce congestion. This TCM is designed to reduce congestion, vehicle idling and increase traffic speeds, which in turn reduces vehicle emissions.
- *Congestion Management Program (CMP):* This program's purpose is to relieve traffic congestion and help improve air quality standards. This includes a land use review program, a transportation demand management/trip reduction element and a transit standards element. The CMP requires an integrated approach to making land use and transportation planning decisions.

4.3 TRAFFIC AND CIRCULATION

- *Public Transit:* The purpose of public transit is to divert travel to transit mode. The Merced County region currently has three fixed-route transit providers: Merced County Transit ("The Bus"); Merced City Shuttle; and, Los Banos Transit. Each provides a fixed route service to major activity centers. In addition to the fixed route service, each agency also provides a dial-a-ride service.

CITY TRANSPORTATION SYSTEMS MANAGEMENT

Transportation Systems Management (TSM) provides for short-range transportation strategies designed to improve both the movement of people and goods and the operational efficiency of the existing transportation system at minimal cost. The City currently implements TSM strategies such as traffic signal synchronization, provision of left-turn pockets, parking and access management, and similar traffic engineering treatments that maximize the use of existing streets and roads without major construction costs.

RELATED GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN

Streets and Highways Goals and Policies

GOAL CIRC-1. Maintain adopted Level of Service (LOS) for City streets and intersections.

Policy CIRC-1.1 Establish and maintain a minimum LOS of D for all arterial and collector streets within the City.

Policy CIRC-1.2. Establish intersection LOS standards when more specific intersection traffic data becomes available.

Policy CIRC-1.3. Design roadway improvements and evaluate development projects using established LOS standards.

Policy CIRC-1.4 Develop the City's roadway system in conformance with the planned roadway system shown on the Circulation Plan (Figure 3-7 of the proposed General Plan) and the City's adopted cross section standards.

Implementation Program CIRC-1.a. Monitor levels of service, along with physical condition of streets and traffic accident patterns, and program improvements as needed through the City's Capital Improvements Program.

GOAL CIRC-2 Creation of a comprehensive financing strategy for local roadway improvements.

4.3 TRAFFIC AND CIRCULATION

Policy CIRC-2.1 Consider financing strategies required to implement the "local" traffic portion of the Merced/Atwater Corridor Major Investment Study (MIS).

Policy CIRC-2.2 Provide "fair share" City funding for regional transportation improvements at a level equal to the contribution of Atwater-generated traffic on the roadway or intersection. Seek regional, state, or other funding for improvements whose need is generated by traffic originating outside Atwater.

GOAL CIRC-3 Support efforts to improve vehicular connections between Atwater and the UC Merced access system.

Policy CIRC-3.1 Support efforts to obtain funding for the projects proposed in the MIS and any subsequent documents approved on a regional basis.

Policy CIRC-3.2 Explore improvements to other roadways connecting the City with UC Merced.

GOAL CIRC-4 Creation of new entrances into Atwater north of the Applegate interchange.

Policy CIRC-4.1 Support efforts to implement the projects proposed in the MIS, which includes improvements to the SR 99/Applegate interchange, creation of a new interchange in the vicinity of SR 99 and Westside..

Policy CIRC-4.2 Support the implementation of the Atwater Redevelopment Agency's Implementation Plan, which includes improvements to the Applegate interchange.

Parking

GOAL CIRC-5 Sufficient parking for all commercial, industrial, residential, and other uses to accommodate all parking either off-street or on-street as appropriate.

Policy CIRC-5.1 Require that all new development provides sufficient on- or off-street parking to meet the standards of the City's Zoning Code or any other applicable planning document (such as the Downtown Specific Plan).

Transit Services and Facilities

GOAL CIRC-6 Convenient and affordable public transit for all Atwater residents to destinations within the City and to nearby communities and destinations, such as UC Merced.

Policy CIRC-6.1 Cooperate with Merced County Transit to provide bus service in all areas of Atwater.

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Policy CIRC-6.2 Ensure that no residences are more than 1 mile from a bus stop; where feasible, provide bus stops no more than ½ mile from residences.

Policy CIRC-6.3 Require new development to provide right-of-way and construct shelters for bus stops as determined to be necessary by the City of Atwater and the Merced County Transit.

Implementation Program CIRC-6.3.a Forward all major or large-scale residential and commercial development applications to Merced County Transit for their review and recommendations regarding the location of bus stops, shelters, or related features.

Bicycles

GOAL CIRC-7 Development of an interconnected system of bikeways and trails throughout Atwater.

Policy CIRC-7.1 Consider bicycle circulation in the review of all proposed public and private development and infrastructure projects. Require that all public and private projects conform with the City's adopted bicycle master plan.

Implementation Program CIRC 7.1.a The City shall prepare and adopt a Master Bicycle and Trail Plan for the City that specifically locates, prioritizes and identifies funding for bicycle and trail facilities. The Plan shall be prepared in an appropriate format for making application for funding from the state's Bicycle Lane Account.

Implementation Program CIRC 7.1.b The City shall conduct an inventory of all bikeways and trails within and surrounding the City as a preliminary step in preparing a Master Plan.

Policy CIRC-7.2 Require that all public and private projects conform with the Regional Bike Plan. Require that the cost of bicycle lanes (including on- and off-street facilities) be paid by private development for those facilities located within a proposed development project.

Pedestrian Facilities

GOAL CIRC-8 A safe and efficient pedestrian circulation system which connects residential areas, schools, and commercial areas with parking lots and public transportation.

Policy CIRC-8.1 Require new public and private development and infrastructure projects to include sidewalks or on-site pedestrian features.

Policy CIRC-8.2 Provide pedestrian circulation within commercial development projects which provides safe walkways separated from parking stalls and drive aisles.

Airport-Related Safety

GOAL SF-8. Avoid new incompatible development within established Airport Safety Zones.

Policy SF-8.1. Ensure that land use development in the area surrounding Castle Airport is consistent with the applicable provisions of the Merced County Airport Land Use Compatibility Plan.

Implementation Program SF-8.a. The City shall adopt the Primary Compatibility Criteria as outlined in Table 2A of the Airport Land Use Compatibility Plan and apply these criteria in the evaluation of projects proposed within the Castle Airport influence area.

Emergency Access

GOAL SF-10. Ensure that adequate emergency vehicle access is provided to developed areas.

Policy SF-10.1. Require each residential subdivision over 50 units in size to have at least two points of access.

Policy SF-10.2. Require all cul-de-sacs to have a length no greater than 600 feet and to have a sufficient turnaround area. Consider longer cul-de-sacs only if additional measures are incorporated to ensure the safety of residents and emergency response personnel.

Implementation Program SF-10.a. Incorporate standards for cul-de-sacs into the City's design guidelines .

Evacuation Routes

GOAL SF-12. Provide for the orderly evacuation of residents in the event of a disaster.

Policy SF-12.1. Pursue the development of more access routes to and from the CAADC site.

Policy SF-12.2. Encourage construction of the proposed Castle Parkway/Santa Fe Drive interchange so as to improve traffic flow and facilitate evacuation from the CAADC site.

Implementation Program SF-12.a. Work with the Castle Joint Powers Authority to develop and implement a circulation plan to increase vehicle access to the CAADC. Options that may be considered and adopted include, but are not limited to, the extension of nearby roadways such as Bellevue Road and Ladino Avenue.

4.3.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The project may have a significant impact on existing traffic and circulation if it will result in:

- 1) Roadways and/or intersections experiencing traffic volumes which result in an unacceptable LOS. For the purposes of this analysis, LOS D or better represents an acceptable range;
- 2) A disruption or interference with existing or planned transit operations and facilities; or,
- 3) A disruption or interference with existing or planned bikeway and pedestrian facilities.

METHODOLOGY

Merced County utilizes a microcomputer traffic model (MINUTP) to estimate average daily highway travel demand. The City of Atwater's travel forecast model is composed of land use data aggregated to traffic analysis zones (TAZs) within the City and County. The model also consists of a detailed street and highway network.

Travel demand, measured in vehicle-trips for each of several trip purposes, has been estimated for Year 2020 using the Merced County Regional Transportation Model. Travel demand was estimated considering: (1) projected land use in each of the TAZs, (2) the planned transportation network, and (3) household behavior. Projected land use data was based upon projected land use contained in the Land Use Element of the Merced County General Plan, Community Plans, and city general plans. Year 2020 socioeconomic data was developed for each TAZ and is composed of the following information: the number of single family and multiple family households; population; and the number of retail, service, education, government and other employment types. Since most traffic congestion and capacity deficiencies are experienced during peak commute periods, forecasts of home-based work trips (home to work, work to home) are especially important.

PROJECT IMPACTS

Roadway Systems and LOS

Impact 4.3-1 Implementation of the proposed General Plan Update would result in numerous state, regional and local roadway segments to operate at an unacceptable level of service by 2020. This is considered a **significant impact**.

Figure 4.3-6 depicts projected average daily traffic volumes for the Year 2020 No Build Analysis (1999 Existing Network with 2020 projected socioeconomic data) on principal roadways in City of Atwater. **Figure 4.3-7** depicts projected average daily traffic volumes for the Year 2020 Preferred Land Use (2020 Model Network with 2020 projected socioeconomic data) on principal roadways in City of Atwater. To determine future level of service (LOS) for each segment along the street and highway network, segment LOS was estimated using the Modified HCM-Based LOS Tables (Florida Tables). The Tables consider the capacity of individual street and highway segments based on numerous roadway variables (design speed, signalized intersections per mile, number of lanes, and saturation flow, etc.). These variables were identified and applied to reflect future traffic LOS conditions in the City of Atwater. A complete description of the Modified Tables and the variables applied to calculate segment LOS is included in the Technical Appendices for this EIR, bound under separate cover.

The segment levels of service for the No Build Alternative are identified in **Table 4.3-4** and **Figure 4.3-8**. The segment levels of service for the Preferred Alternative are identified in **Table 4.3-5** and **Figure 4.3-9**. Referencing these tables and figures, the results for both alternatives indicate that the segments analyzed will be operating at LOS A or LOS B, with the exceptions of SR 99, Winton Way and Atwater Boulevard, which are expected to operate at LOS F. The circulation plan is included as **Figure 4.3-10**.

Future Recreation-Related Travel

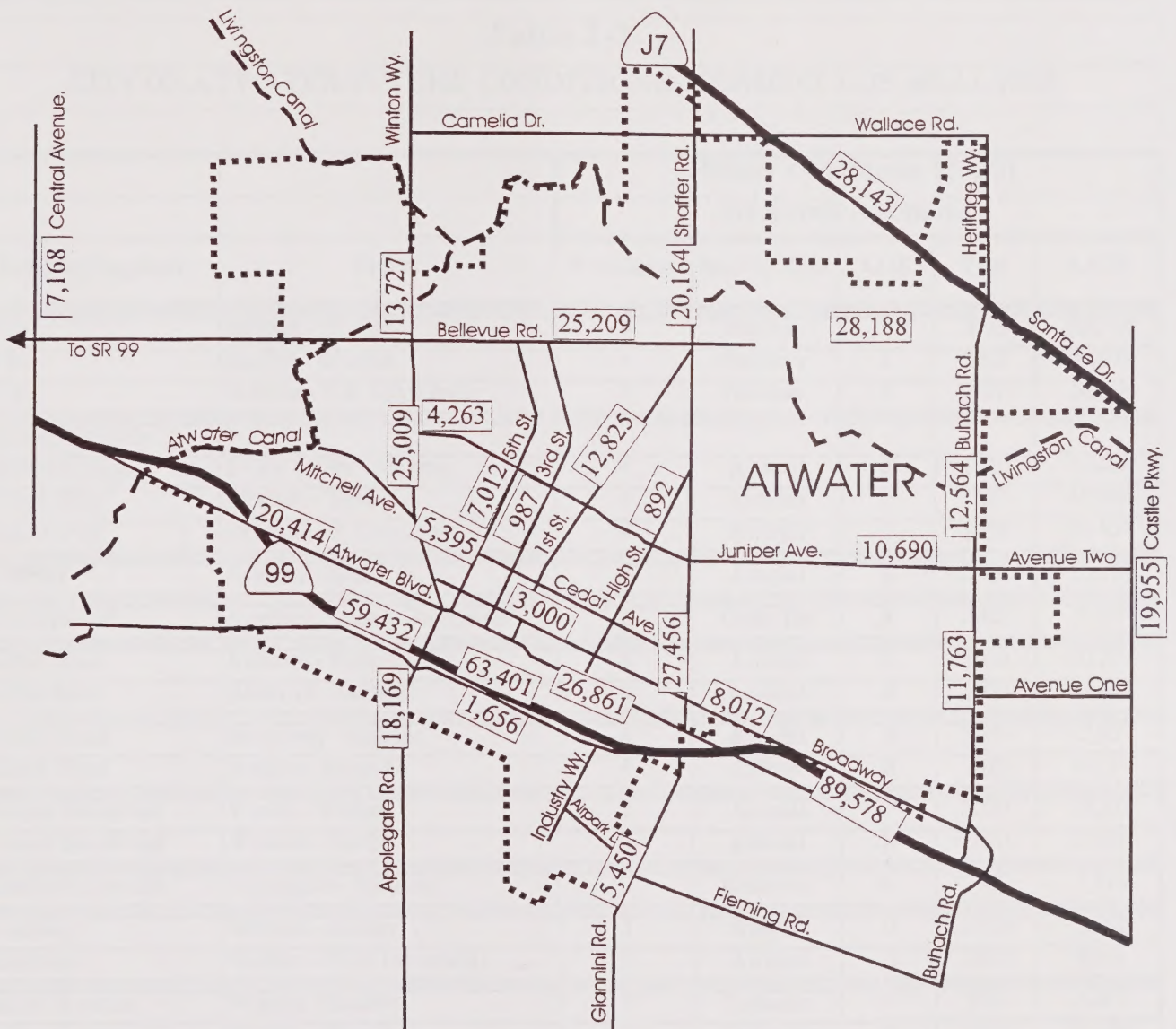
Many highways in the vicinity of the City of Atwater experience the highest traffic volumes on weekends, particularly in the summer, as a result of recreational travel. This situation is likely to continue since minor recreation facilities are located within Merced County and in Fresno County to the south. Within Merced County, these generators include: Merced Falls, Lake Yosemite, San Luis Reservoir, three National Wildlife Refuges and various public parks. Roadway segments likely to experience significant weekend activity during summer months include SR 99.

4.3 TRAFFIC AND CIRCULATION

Table 2-1

CITY OF ATWATER FUTURE CONDITIONS SEGMENT LOS ANALYSIS

Future Conditions (2020)						
No Build Alternative						
Roadway Segment	Limits	# of Lanes	Facility Type	LOS	Year	AADT
SR 99	Buhach - Shaffer	4	Freeway	F	2020	89,578
SR 99	Shaffer - Winton	4	Freeway	D	2020	63,401
SR 99	Winton - NW City Limits	4	Freeway	D	2020	59,432
Principal Arterials:						
Applegate Road	S City Limits - Atwater	4	Arterial	B	2020	18,169
Winton Way	Atwater - Bellevue	4	Arterial	B	2020	25,009
Winton Way	Bellevue - N City Limits	4	Arterial	B	2020	13,727
1st Street	Atwater - Bellevue	4	Arterial	B	2020	12,825
Giannini Road	Atwater Jordan - Commerce	2	Collector	A	2020	5,450
Shaffer Road	Atwater - Bellevue	4	Arterial	B	2020	27,456
Shaffer Road	Bellevue - Santa Fe	4	Arterial	B	2020	20,164
Buhach Road	Broadway - Juniper	4	Arterial	B	2020	11,763
Buhach Road	Juniper - Santa Fe	4	Arterial	B	2020	12,564
Atwater Boulevard	Wedel - Winton	2	Arterial	F	2020	20,414
Atwater Boulevard	Winton - Shaffer	2	Arterial	F	2020	26,861
Commerce Avenue	Applegate - Industry	2	Collector	A	2020	1,656
Broadway	Winton - Shaffer	2	Arterial	B	2020	3,000
Broadway	Shaffer - 99 (to the south)	2	Arterial	B	2020	8,012
Juniper Avenue	Winton - Shaffer	2	Collector	A	2020	4,263
Juniper Avenue	Shaffer - Buhach	2	Collector	B	2020	10,690
Bellevue Road	Gibson - Shaffer	4	Arterial	B	2020	25,209
Bellevue Road	Shaffer - Santa Fe	4	Arterial	B	2020	28,188
3rd Street	Atwater - Juniper	2	Collector	A	2020	987
5th Street	Atwater - Juniper	2	Collector	B	2020	7,012
Cedar Avenue	Winton - 1st	2	Collector	A	2020	5,395
High Street	Atwater - Juniper	2	Collector	A	2020	892
Central Avenue	Longview - Liberty	4	Arterial	B	2020	7,168
Castle Parkway	SR 99 - Santa Fe	4	Expressway	B	2020	19,955
Santa Fe Drive	Bellevue - Shaffer	4	Arterial	B	2020	28,143



4.3 TRAFFIC AND CIRCULATION

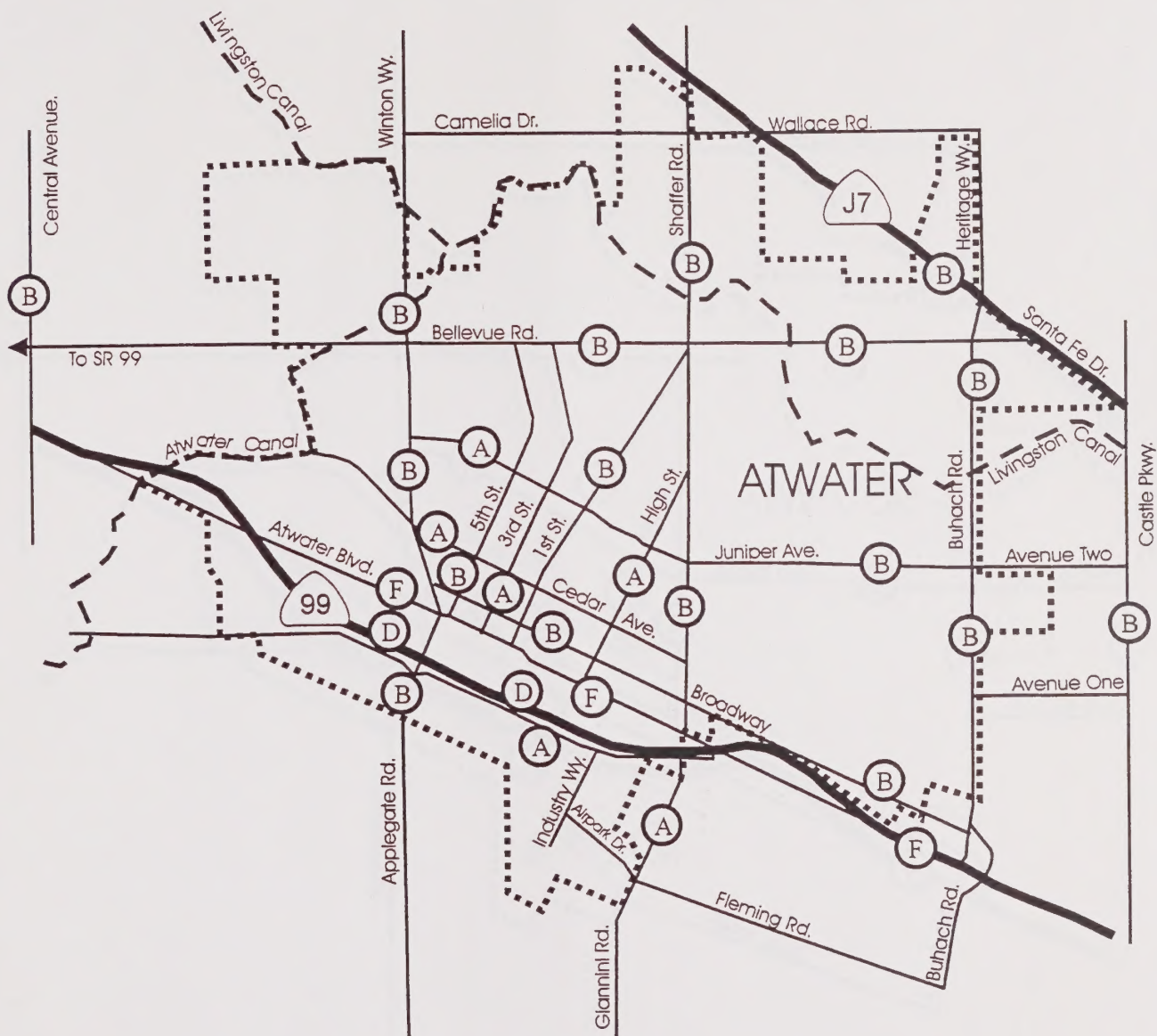
Table 2-2

CITY OF ATWATER FUTURE CONDITIONS SEGMENT LOS ANALYSIS

		Future Conditions (2020)				
		Preferred Alternative				
Roadway Segment	Limits	# of Lanes	Facility Type	LOS	Year	AADT
SR 99	Buhach - Shaffer	4	Freeway	F	2020	106,985
SR 99	Shaffer - Winton	4	Freeway	F	2020	80,808
SR 99	Winton - NW City Limits	4	Freeway	F	2020	76,839
Principal Arterials:						
Applegate Road	S City Limits - Atwater	4	Arterial	B	2020	10,444
Winton Way	Atwater - Bellevue	4	Arterial	C	2020	35,886
Winton Way	Bellevue - N City Limits	4	Arterial	B	2020	24,604
1st Street	Atwater - Bellevue	4	Arterial	B	2020	13,078
Giannini Road	Atwater Jordan - Commerce	2	Collector	A	2020	5,191
Shaffer Road	Atwater - Bellevue	4	Arterial	B	2020	30,701
Shaffer Road	Bellevue - Santa Fe	4	Arterial	B	2020	23,409
Buhach Road	Broadway - Juniper	4	Arterial	B	2020	12,937
Buhach Road	Juniper - Santa Fe	4	Arterial	B	2020	13,738
Atwater Boulevard	Wedel - Winton	2	Arterial	F	2020	28,503
Atwater Boulevard	Winton - Shaffer	2	Arterial	F	2020	34,950
Commerce Avenue	Applegate - Industry	2	Collector	A	2020	1,570
Broadway	Winton - Shaffer	2	Arterial	B	2020	3,540
Broadway	Shaffer - 99 (to the south)	2	Arterial	B	2020	8,552
Juniper Avenue	Winton - Shaffer	2	Collector	A	2020	4,607
Juniper Avenue	Shaffer - Buhach	2	Collector	B	2020	11,034
Bellevue Road	Gibson - Shaffer	4	Arterial	B	2020	26,981
Bellevue Road	Shaffer - Santa Fe	4	Arterial	B	2020	29,960
3rd Street	Atwater - Juniper	2	Collector	A	2020	1,007
5th Street	Atwater - Juniper	2	Collector	B	2020	7,152
Cedar Avenue	Winton - 1st	2	Collector	A	2020	6,366
High Street	Atwater - Juniper	2	Collector	A	2020	910
Central Avenue	Longview - Liberty	4	Arterial	B	2020	14,010
Castle Parkway	SR 99 - Santa Fe	4	Express way	C	2020	35,106
Santa Fe Drive	Bellevue - Shaffer	4	Arterial	B	2020	31,418



FIGURE 4.3-7
PROJECTED FUTURE (2020) TRAFFIC VOLUMES



YEAR 2020 LEVEL OF SERVICE (LOS) - NO BUILD ALTERNATIVE

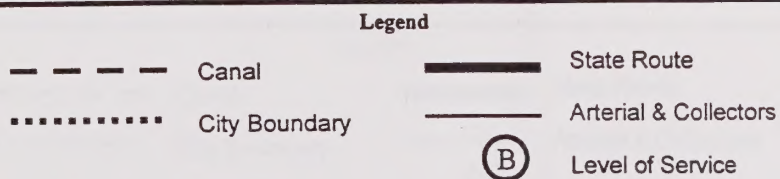
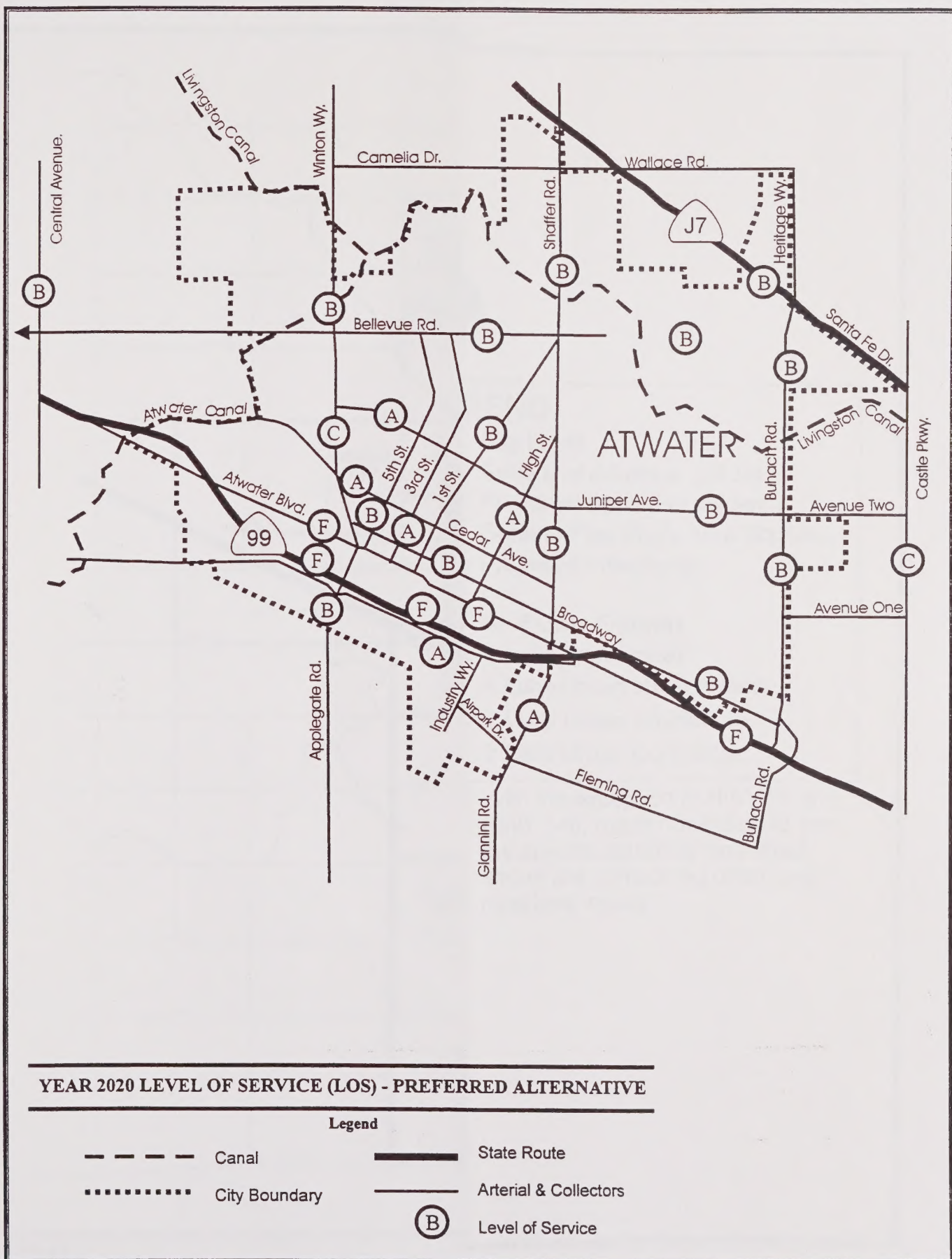
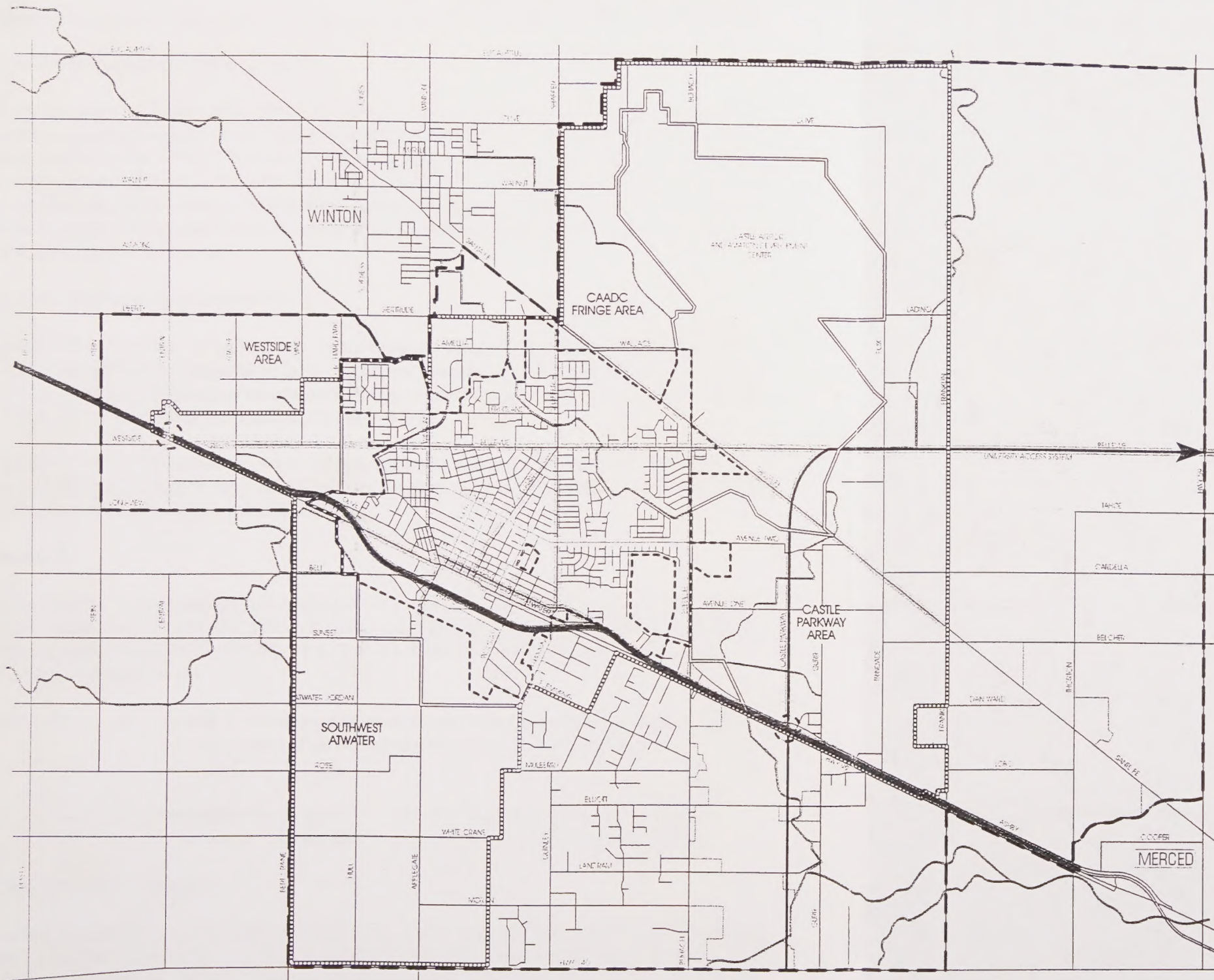


FIGURE 4.3-8
PROJECTED FUTURE (2020) LEVEL OF SERVICE





LEGEND

- City Limits
- Sphere of Influence (1984)
- ▤ Proposed Sphere of Influence
- - - General Plan Study Area Boundary
- Proposed Interchange
- ▬ 6 - 8 Lane Freeway
- ▬ 4 Lane Expressway
- ▬ 4 Lane Urban Major Arterial
- ▬ 2 Lane Urban Arterial
- ▬ 2 Lane Urban Connector

NOTE: With the exception of HWY 59 and HWY 140, roads not indicated with the specific classifications listed above are considered urban and rural local roads.

Future Truck-Related Transport of Goods

Primary generators of truck traffic in the City are agricultural and industrial uses. Since agriculture is a relatively mature industry in the City, overall truck traffic generated by agricultural uses should remain stable in the future. However, relocation and replacement of individual agricultural processing plants can significantly alter localized patterns and concentrations of truck traffic within City Urban Area Boundaries and Community Urban Development Boundaries. While industrial growth is expected within the City the scale of industrial-related truck traffic is considered secondary to that generated by agriculture.

Recommended Roadway Improvements

Based on the assessment of current and future highway needs as discussed in this Circulation Element, and the City's transportation goals, objectives, policies, and issues of concern, a series of responsive transportation improvements have been proposed for incorporation in the Circulation Element. These projects are summarized in **Table 4.3-6**.

All segments of the designated freeways and arterials contained in the improvement program have been classified according to the level of the improvement that may be required to accommodate projected future traffic levels by the Year 2020.

Mitigation

Implementation of the following provisions of the proposed General Plan revision substantially mitigate **Impact 4.3-1: CIRC-1, CIRC-1.1, CIRC-1.2, CIRC-1.3, CIRC-1.a, CIRC-2, CIRC-2.1, CIRC-2.2, CIRC-3, CIRC-3.1, CIRC-3.2, CIRC-4.1, CIRC-4.2, SF-12.2 and SF-12.a**. Additional mitigation is offered below:

MM 4.3-1a Individual project applicants shall be required to contribute their fair share to the construction of local roadway improvements as shown in Table 4.3-5 of this report.

Timing/Implementation: Prior to approval of development plans.
Enforcement/Monitoring: City of Atwater Planning Department.

Significance After Mitigation

As noted in both the proposed Circulation Element of the General Plan Update and the *Working Paper*, proposed improvements to SR 99 could attract federal and state funding. However, local roadway improvements would not be subject to such funds. Implementation of the above-listed provisions of the General Plan Update and **MM 4.3-1a** would reduce **Impact 4.3-1** to **less than**

4.3 TRAFFIC AND CIRCULATION

significant by establishing LOS standards for local roadways (LOS D), ensuring that project impacts are considered prior to approval, establishing a funding method for local roadways.

**TABLE 4.3-6
RECOMMENDED ROADWAY IMPROVEMENTS**

Roadway	Limits	No Build		Preferred Alt.	
		Imp.	LOS	Imp.	LOS
SR 99	Buhach to Shaffer	Increase to 6 lanes	LOS D	Increase to 8 lanes	LOS D
SR 99	Shaffer to Winton	N/A	LOS D	Increase to 6 lanes	LOS C
SR 99	Winton to NW City Limits	N/A	LOS D	Increase to 6 lanes	LOS D
Atwater Boulevard	Wedel to Winton	Increase to 4 lanes ¹	LOS B	Increase to 4 lanes ¹	LOS C
Atwater Boulevard	Winton to Shaffer	Increase to 4 lanes ¹	LOS B	Increase to 4 lanes ¹	LOS B
Other					
<i>Construct Castle Parkway as a four-lane expressway between Santa Fe Drive and SR 99</i>					
<i>Construct frontage roads to serve as primary access for lands adjacent to Castle parkway.</i>					
<i>Extend Bellevue Road as a four-lane arterial to the SR 99/Westside interchange.</i>					

¹ Atwater Boulevard

While additional right-of-way will not be feasible to accommodate the necessary widening of Atwater Boulevard, several alternatives should be explored that would provide existing right-of-way for additional travel lanes within the two segments affected by LOS deficiencies including:

- Removal of on-street parking resulting in minor restriping of the existing facility to accommodate additional lanes in both directions;
- Reconfiguration of existing intersections through the use of raised medians, etc.; and
- Traffic Systems Management (TSM) strategies (at major intersections that would enhance traffic flow without requiring additional right-of-way).

Source: VRPA

Existing or Planned Transit Operations

Airport Operations

Impact 4.3-2 Implementation of the proposed General Plan Update may result in conflicts with respect to access, safety, and level of service for those roadways immediately

surrounding the CAADC airport. This presents a **significant impact** with regard to the airport.

The most current forecasts for aviation demand in the Merced County region are in the current California Aviation System Plan (CASP). The Plan uses three indicators to forecast aviation trends: population, number of households, and personal income. These factors, in conjunction with historical trends of aircraft mix, aircraft operations and airport funding, are utilized to forecast demand. The City of Atwater and Merced County currently participate in a Joint Powers Authority (JPA) that oversees reuse of the former Castle Air Force Base. Possible uses might include private aviation, commercial passenger service, aviation maintenance, aviation educational, and ag/air cargo.

Mitigation

In addition to those listed above, implementation of the following provisions of the proposed General Plan Update substantially reduce **Impact 4.3-2: SF-8, SF-8.1 and SF-8.a**.

Implementation of the proposed General Plan revision would reduce **Impact 4.3-2 to less than significant** by ensuring that airport operations are considered with regard to congestion and land use compatibility.

Emergency Access and Evacuation Routes

Impact 4.3-3: Implementation of the proposed General Plan Update may generate traffic that would interfere with emergency access and evacuation. This is considered a **significant impact**.

Mitigation

In addition to those listed above, implementation of the following provisions of the proposed General Plan Update substantially reduce **Impact 4.3-3: SF-10, SF-10.1, SF-10.2, SF-10.a, SF-12 and SF-12.1**.

Implementation of the proposed General Plan revision would reduce **Impact 4.3-3 to less than significant** by ensuring that emergency access and evacuation is considered when approving new development.

Mass Transit

The City of Atwater is served by of the countywide public transit system called The Bus. The Bus is Merced County's only countywide provider of public transit service. The Bus provides basic

public transportation service to 17 cities and communities in Merced County, including Atwater. The City also provides a dial-a-ride paratransit service. Implementation of the proposed General Plan Update is expected to have a **less than significant** impact on mass transit. This is reinforced by the following provisions of the Update: **CIRC-6, CIRC-6.1, CIRC-6.2, CIRC-6.3, and CIRC-6.a.**

Bicycle and Pedestrian Facilities

The City of Atwater is in the process of adopting a Regional Bike Plan. However, bicycles are not currently considered a major mode of travel in the City of Atwater. The bicycle plan provides for connections between major urban and recreational facilities within the City.

With the onset of air quality attainment strategies and congestion management, bicycling is considered an effective alternative mode of transportation that can help to improve air quality and reduce the number of vehicles traveling along congested facilities.

Pedestrian facilities within the immediate vicinity of schools and recreational facilities are also important components of the non-motorized transportation system. Pedestrian circulation facilities within and around school and recreational areas, in the form of sidewalks built to current City standards, are provided where they are appropriate and enhance the safety of those who choose to walk to and from their destination.

The City of Atwater will continue to expand bike paths and pedestrian walkways in relation to urban and rural development. This is reinforced by the following provisions of the proposed General Plan Update: **CIRC-7, CIRC-7.1, CIRC-7.a, and CIRC.b.** Therefore, this impact is considered **less than significant**.

SECTION 4.4

NOISE

This section analyzes the noise impacts associated with implementation of the proposed land use modifications and policy revisions for the Atwater General Plan Update. The analysis includes a general description of the existing ambient noise environment in the Planning Area, the technical criteria used to establish the significance of a noise impact, and the potential impacts of this project.

4.4.1 EXISTING SETTING

BACKGROUND AND TECHNOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough, at least 20 times per second, they can be heard and hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz). Definitions of acoustical terminology used in this section are provided in the Glossary at the end of this report.

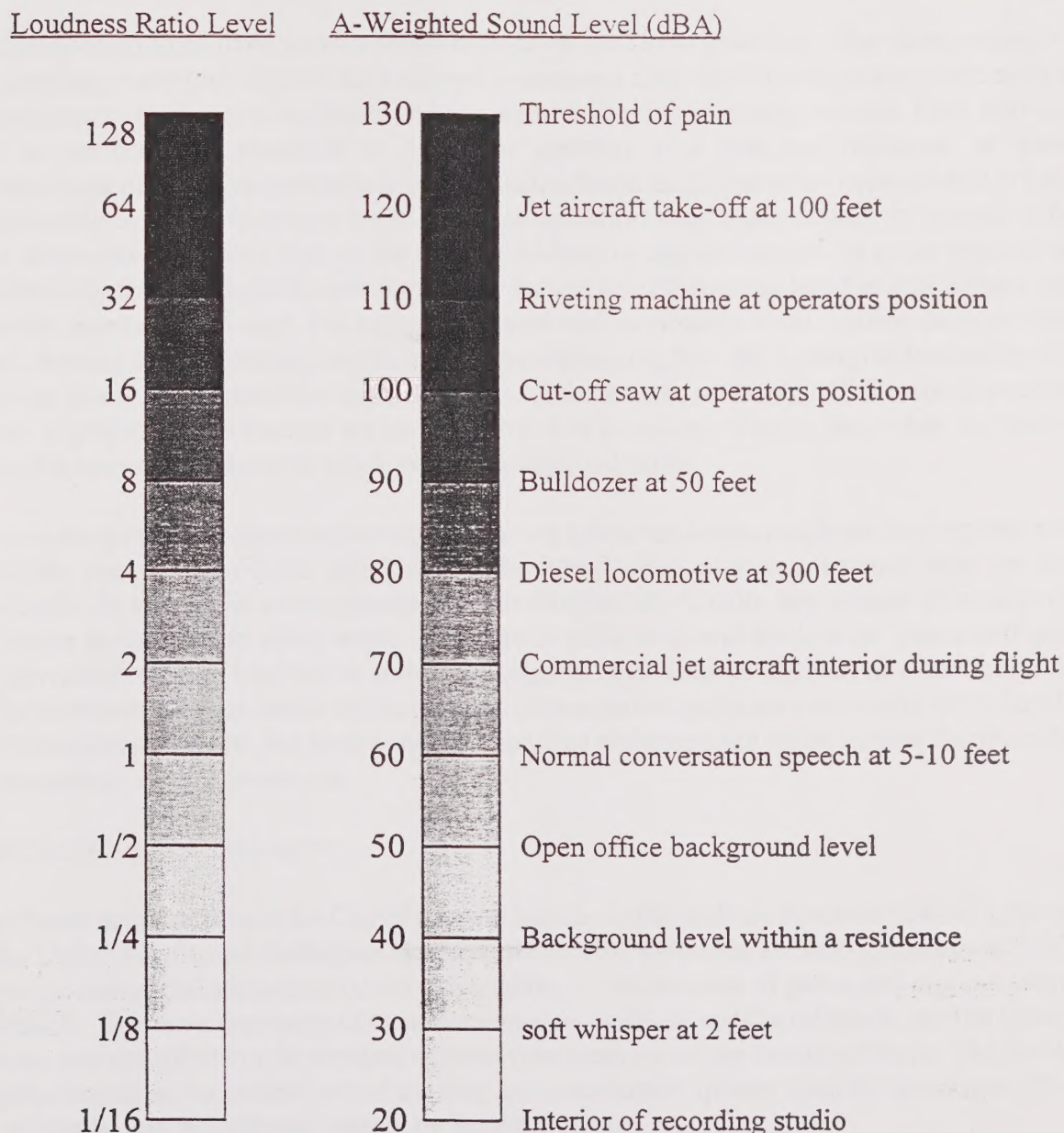
Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels correspond closely to human perception of relative loudness. **Figure 4.4-1** shows examples of noise levels for several common noise sources and environments.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels, expressed as dBA, and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of A-weighted levels.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Day-night Average Level (Ldn) is another tool. It is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as

though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

FIGURE 4.4-1
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES



Noise in the community has often been cited as being a health problem, not in terms of actual physiological damages such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from

interference with human activities such as sleep, speech, recreation and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, the acceptability of the environment for people decreases. This decrease in acceptability and the corresponding threat to public well-being is the basis for land use planning policies preventing exposures to excessive community noise levels.

To control noise from fixed sources which have developed from processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

In addition to the A-weighted noise level, other factors should be considered in establishing criteria for noise sensitive land uses. For example, sounds with noticeable tonal content such as whistles, horns, droning or high-pitched sounds may be more annoying than the A-weighted sound level alone suggests. Many noise standards apply a penalty, or correction, of five (5) dBA to such sounds. The effects of unusual tonal content are generally more of a concern at nighttime, when residents may notice the sound in contrast to low levels of background noise.

Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound which was not audible previously. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

EXISTING NOISE ENVIRONMENT

Significant noise sources in the City of Atwater include traffic on State Route 99 (SR-99), operations on the Union Pacific and Burlington Northern & Santa Fe Railroads, aircraft operations at the Castle Airport, commercial and industrial activities, active recreation areas of parks, and outdoor play areas of schools. The most pervasive of these noise sources is SR-99 and the railroads, but the other noise sources also contribute to the ambient noise environment on a more localized basis. The residential neighborhoods in the central part of the City are considerably quieter than the areas near SR-99 or the railroads, and are affected mainly by local traffic.

Roadway Traffic

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calven vehicle noise emission curves was used to predict traffic noise levels within the Atwater City Limits. The FHWA Model is the traffic noise prediction model currently preferred by the Federal Highway Administration, the State of California Department of Transportation (Caltrans), and most city and county governments, for use in traffic noise assessment. Although the FHWA Model is in the process of being updated by a more sophisticated traffic noise prediction model, the use of RD-77-108 is considered acceptable for the development of General Plan traffic noise contours.

The FHWA Model was used with traffic data obtained from Valley Research and Planning Technologies, published Caltrans traffic counts and VRPA field surveys to develop Ldn contours for SR-99 and major roadways within the City. The FHWA Model input data for those roadways is provided in **Table 4.4-1**. The distances from the centerlines of the major roadways to the existing 60 and 65 dB Ldn contours are also summarized in **Table 4.4-1**, and the 60 dB Ldn contour locations for existing conditions on State Route 99 are shown on **Figure 4.4-2**.

TABLE 4.4-1
TRAFFIC NOISE MODEL DATA INPUTS AND DISTANCES TO EXISTING NOISE CONTOURS

Seg.	Roadway Name	Segment Description	ADT	Day %	Night %	Truck Usage		Speed (mph)	Distance to L _{dn} Contours (feet)	
						Med.	Hvy.		60 dB	65 dB
1	State Route 99	Buhach - Shaffer	63,276	75	25	5	20	65	2,182	1,013
2		Shaffer - Winton	44,983	75	25	5	20	65	1,738	807
3		Winton - NW City Limits	43,742	75	25	5	20	65	1,706	79
4	Applegate Road	South City Limits - Atwater	20,023	83	17	5	5	50	409	190
5	Winton Way	Atwater - Bellevue	20,353	83	17	2	2	45	279	130
6		Bellevue - North City Limits	14,158	83	17	2	2	45	219	102
7	1 st Street	Atwater - Bellevue	8,407	83	17	2	2	40	130	60
8	Giannini	Atwater Jordan - Commerce	1,846	83	17	5	5	45	73	34
9	Shaffer Road	Atwater - Bellevue	13,499	83	17	2	2	45	212	99
10		Bellevue - Santa Fe	12,207	83	17	2	2	45	199	92
11	Buhach Road	Broadway - Juniper	9,649	83	17	5	5	50	252	117
12		Juniper - Santa Fe	6,510	83	17	5	5	50	194	90

Seg.	Roadway Name	Segment Description	ADT	Day %	Night %	Truck Usage		Speed (mph)	Distance to L ₅₀ Contours (feet)	
						Med.	Hvy.		60 dB	65 dB
13	Atwater Boulevard	Wedel - Winton	15,425	83	17	5	5	45	302	140
14		Winton - Shaffer	18,270	83	17	5	5	45	338	157
15	Commerce Avenue	Applegate - Industry	3,047	83	17	5	5	45	102	47
16	Broadway	Winton - Shaffer	4,063	83	17	2	2	45	95	44
17		Shaffer - 99 (to the South)	6,825	83	17	5	5	45	175	81
18	Juniper Avenue	Winton - Shaffer	1,929	83	17	2	2	40	49	23
19		Shaffer - Buhach	7,451	83	17	2	2	40	120	56
20	Bellevue Road	Gibson - Shaffer	12,782	83	17	2	2	45	205	95
21		Shaffer - Santa Fe	13,278	83	17	2	2	45	210	98
22	Santa Fe Drive	Bellevue - Shaffer	15,518	83	17	5	5	55	391	182

ADT - Average Daily Traffic

Day%/Night % - percentage of daily traffic on road at day/night

Source: Valley Research and Planning Technologies, Bollard & Brennan, Inc., Caltrans

Railroad Noise

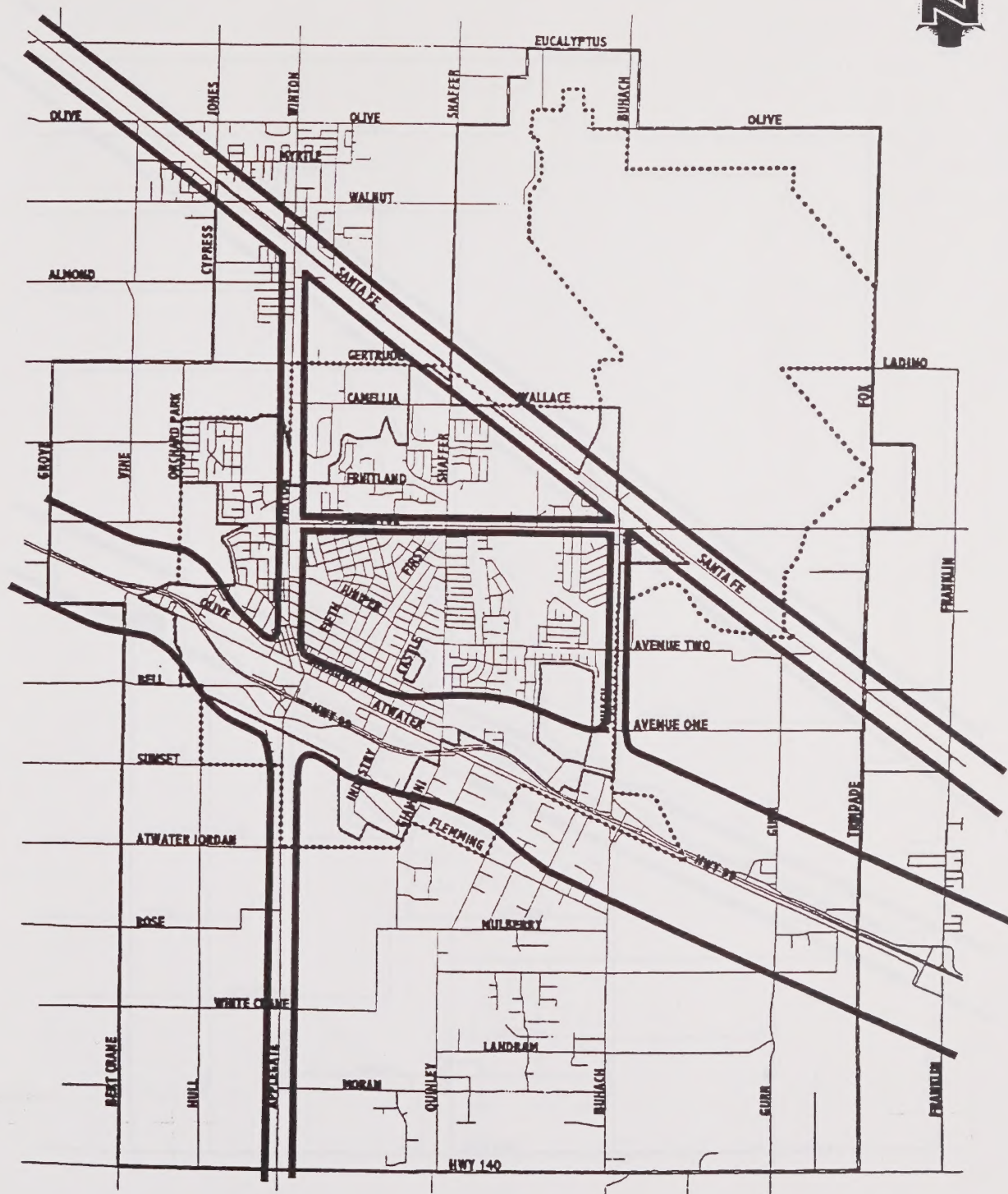
Railroad activity in the City of Atwater consists of freight and passenger operations on the Burlington Northern & Santa Fe Railroad (BN&SF) and freight operations on the Union Pacific Railroad (UPRR) tracks. The BN&SF and UPRR tracks are shown on **Figure 4.4-3**. Existing railroad noise emissions were quantified through continuous noise level measurements conducted over a 48-hour period (July 27-30, 1998) at the locations shown on **Figure 4.4-3**. The results of the railroad noise level measurements are shown in **Table 4.4-2**.

TABLE 4.4-2
RAILROAD NOISE MEASUREMENT RESULTS, JULY 27-30, 1998

Railroad Line	Measurement Distance (feet) ¹	Average Number of Daily Operations ²	Mean Measured SEL (dB)
BN&SF	100	24	102
Union Pacific	200	20	99

1) Noise level measurement sites are shown in Figure 9.4.

2) Number of railroad operations estimated from an analysis of single-event noise level data collected during the monitoring period. Events were considered to be railroad operations if they met criteria for duration, maximum level and SEL.



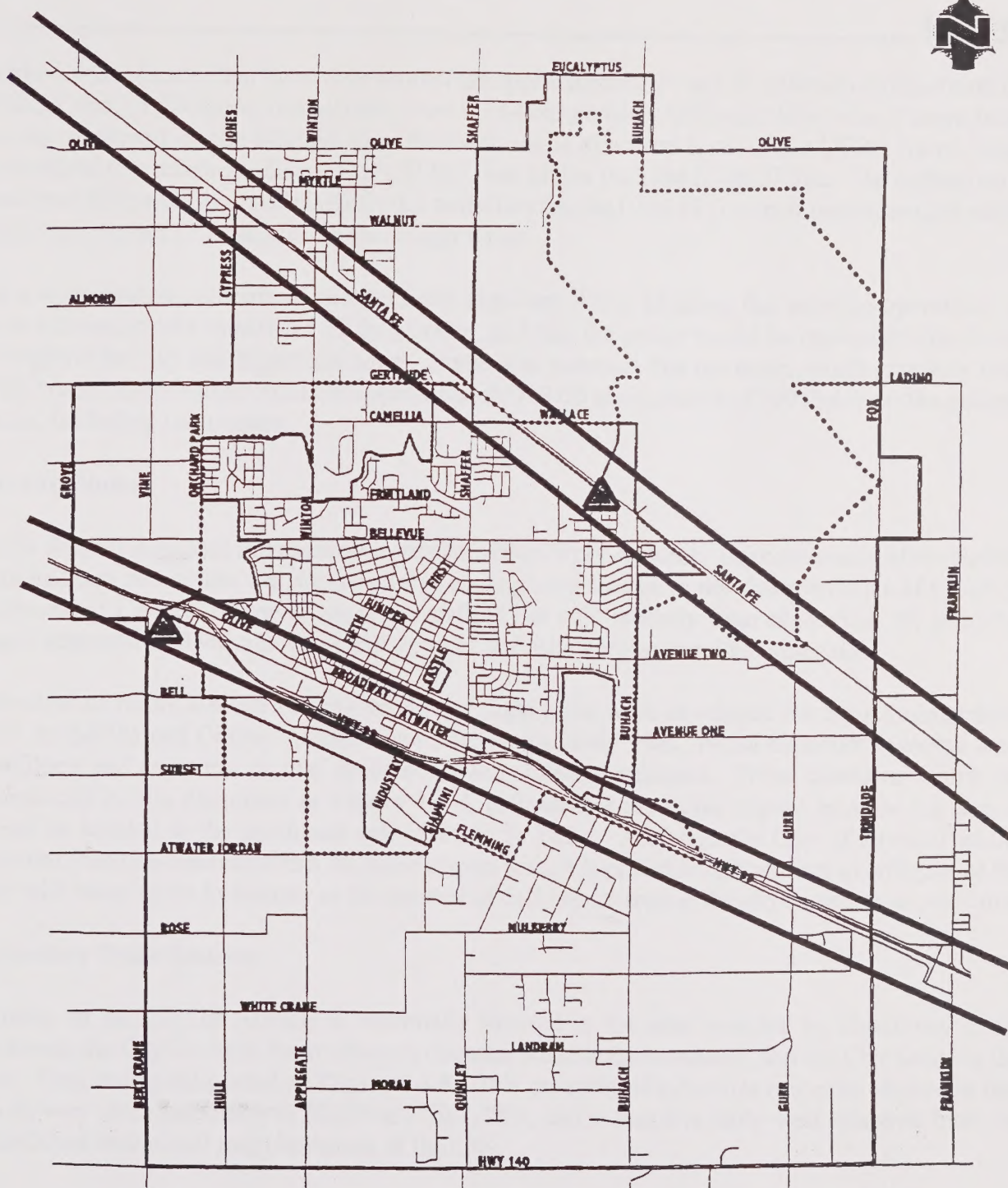
LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- 60 dB Ldn Noise Contours



Castle Airport & Aviation
Development Center



LEGEND:

- Project Study Limits
- Atwater City Limits
- Sphere of Influence (1984)
- ▲ Noise Measurement Sites
- 60 dB Ldn Noise Contour

 Castle Airport & Aviation Development Center

Table 4.4-2 indicates that there were on average approximately 24 and 20 railroad operations on the BN&SF and UPRR lines, respectively, over a 24-hour period. Although there were 4 more trains per day observed on the BN&SF line, the mean sound exposure level of the UPRR trains, when normalized to a reference distance of 100 feet, was higher than the BN&SF line. The difference in measured railroad noise levels is likely due to the fact that the BN&SF line included passenger trains, which are typically not as loud as the freight trains.

For a conservative estimate of railroad noise exposure, it was assumed that existing operations on these railroad tracks consist of 25 daily trains, and that the trains would be randomly distributed throughout the day and nighttime hours. It was also assumed that the mean sound exposure level of the trains on both lines would be approximately 103 dB at a distance of 100 feet from the railroad tracks, including horn usage.

Aircraft Noise

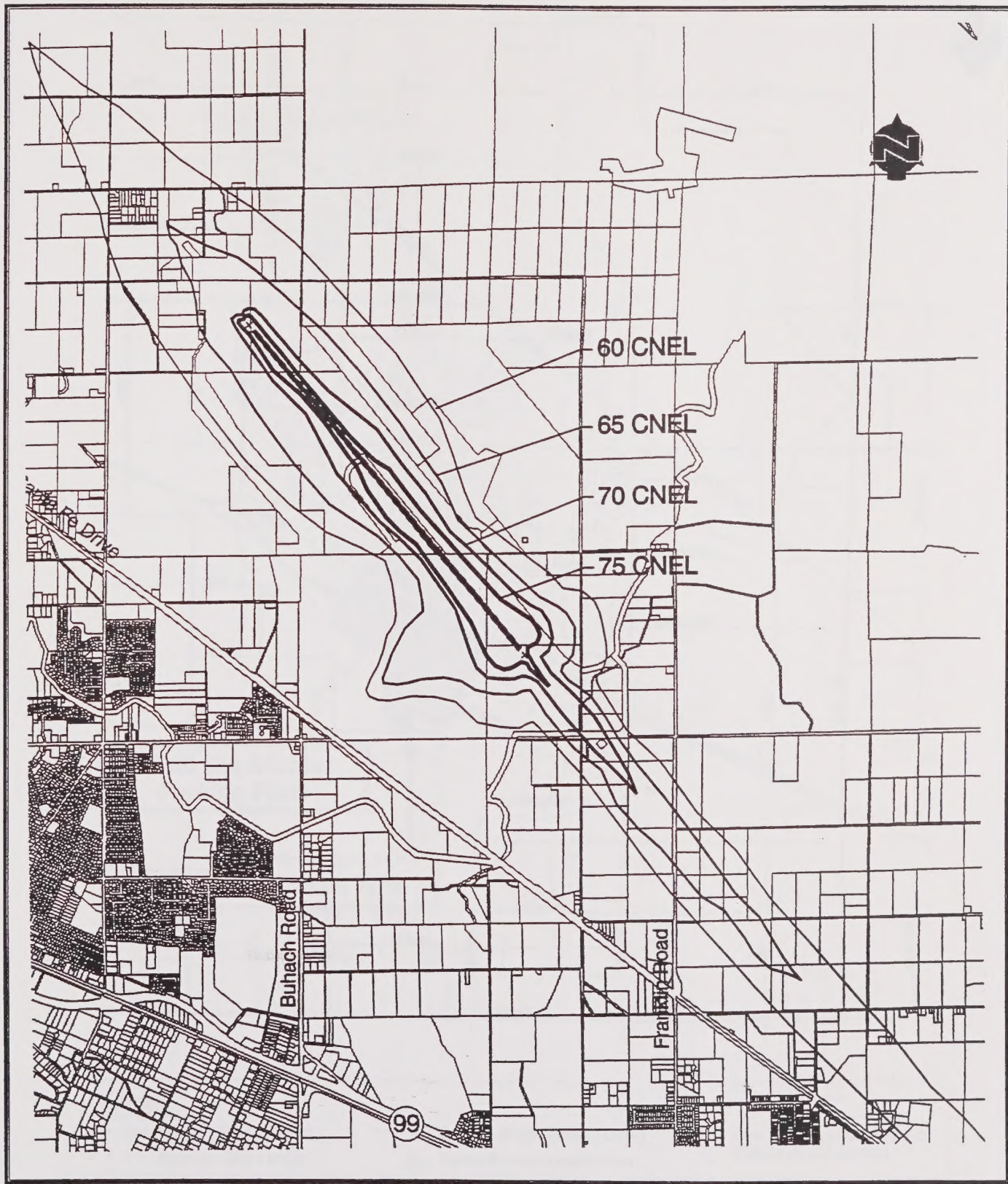
Castle Airport is located immediately northeast of the City of Atwater. The conversion of the airfield from military to civilian use has resulted in a significant change in the characteristics of the noise generated at Castle. However, since the airfield has only recently been converted, the potential future character and volume of aircraft activity at Castle Airport remains uncertain.

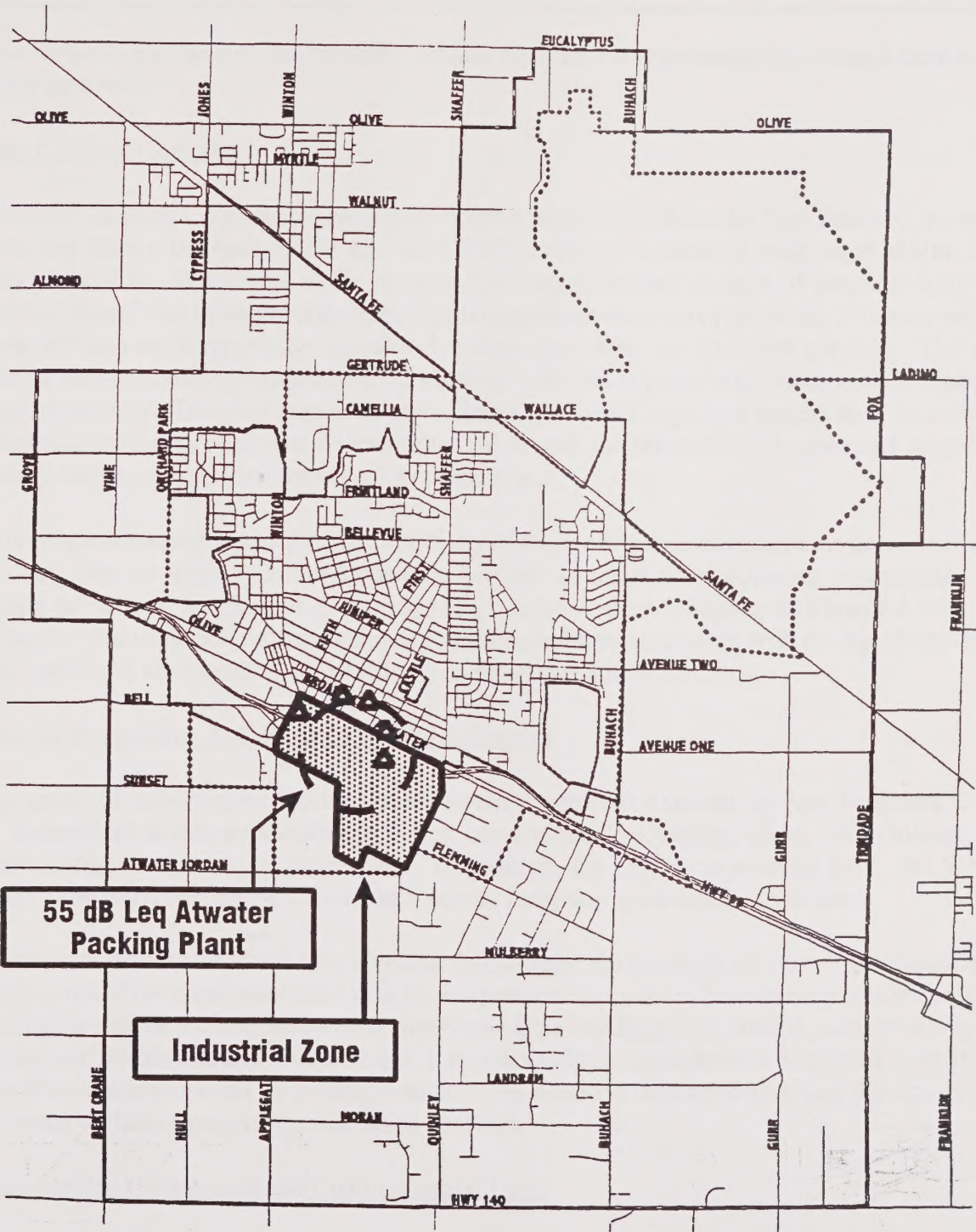
Estimates of future aircraft activity levels and flight paths were developed for the Administrative Draft of the Merced County Airport Land Use Compatibility Plan. Noise exposure contours were developed and presented in that document based on these estimates. Those contours, which are reproduced in this document as **Figure 4.4-4**, indicate that the noise impact area for the airport would be located to the north and east of Santa Fe Drive. Although the City of Atwater would apparently not be located within the noise impact area, it is probable that aircraft overflights of the City will occur more frequently as the number of daily operations at the airport increase over time.

Stationary Noise Sources

Industry in the City of Atwater is essentially focused in the area bounded by Broadway to the northeast, the City limits to the southwest, Giannini Road to the southeast, and the City limits to the west. This area is delineated on **Figure 4.4-5**. This grouping of industries is ideally located in that it is in very close proximity to SR-99 and the UPRR, and in that it is fairly well removed from the established residential neighborhoods of the City.

Descriptions of existing fixed noise sources in the City of Atwater are provided below. These uses are intended to be representative of the relative noise generation of such uses, and are intended to identify specific noise sources that should be considered in the review of development proposals. Site specific noise analyses should be performed where noise sensitive land uses are proposed in proximity





LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- ▲ Noise Measurement Sites

Castle Airport & Aviation Development Center

to these or similar noise sources, or where similar sources are proposed to be located near noise-sensitive land uses.

Atwater Canning Company

The Atwater Canning Company is the largest industry identified within the City limits. Located on 901 Packers Street, between SR-99 and the UPRR tracks, it is situated with other major noise sources in the City. Operations at the Atwater Canning Company consist of canning fruits and vegetables. From June through September, the plant operates seven days per week, 24 hours per day. The rest of the year it reportedly operates five days per week for 10 hours per day. The most significant noise-producing equipment at this facility is the steam generator, which is clearly audible in the plant vicinity. The plant generates approximately 35 truck trips on a typical day. In addition, the plant utilizes the railroad two to three times per month for deliveries. The railroad operations reportedly occur on weekdays between 6 a.m. and 6 p.m.

Noise level measurements conducted in the vicinity of this facility indicate that plant-generated noise levels vary, but are highest in the immediate vicinity of the main processing equipment. The estimated location of the plant 55 dB average (L_{eq}) noise contour is shown on **Figure 4.4-5**. Bill Effinger, the plant engineer, is unaware of any noise complaints associated with the operation of this facility, and there are currently no specific plans for expansion of the plant.

Commerce Avenue/Air Park Business Center Industries

A large group of industrial facilities is located in the Commerce Avenue/Air Park Business Center area. Businesses in this area include moving, construction, packaging, glass, well drilling, and cabinet making companies, to name a few. In addition, the City's corporation yard, the Winton Disposal Company, and the NCI Building Systems company are located in this area.

A detailed site inspection of this area revealed that, despite the presence of numerous industries in this area, most of the noise associated with these operations appears to be either equipment entering or leaving the site, or it is enclosed within warehouse-type buildings. As a result, a noise survey was not conducted within this area. Nonetheless, this area should be considered a potentially significant source of noise and proposals for development of noise-sensitive uses anywhere near this area should not proceed without a project-specific noise analysis.

General Service Commercial and Light Industrial Uses

Noise sources associated with service commercial uses such as automotive and truck repair facilities, wrecking yards, tire installation centers, car washes, loading docks, transfer stations, body shops, feed stores, are found within the City of Atwater. Many of these sources are located on Atwater Boulevard and Broadway, although several general commercial uses are located along Bellevue

Road. The noise emissions of these types of uses are dependent on many factors, and therefore are difficult to quantify precisely. Nonetheless, noise generated by these uses contributes to the ambient noise environment in the immediate vicinity of these uses, and should be considered where either new noise-sensitive uses are proposed nearby, or where similar uses are proposed in existing residential areas.

Parks and School Playing Fields

There are several park and school uses within the City limits. These uses are spread throughout the City. Noise generated by these uses depends on the age and number of people utilizing the respective facility at a given time, and the types of activities they are engaged in. School playing field activities tend to generate more noise than those of neighborhood parks, as the intensity of school playground usage tends to be much higher. At a distance of 100 feet from an elementary school playground being used by 100 students, average and maximum noise levels of 60 and 75 dB, respectively, can be expected. At organized events, such as high-school football games with large crowds and public address systems, the noise generation is often significantly higher. As with service commercial uses, the noise generation of parks and school playing fields is variable.

Community Noise Survey

To quantify existing noise levels in the quieter parts of the City of Atwater, a community noise survey was performed at seven locations in the City which are somewhat removed from major noise sources. One of the seven locations was monitored over a continuous 24-hour period, while the other six locations were each monitored for two 15-minute periods during daytime hours and one 15-minute period during nighttime hours. The results of the community noise survey are provided in Table 4.4-3.

**TABLE 4.4-3
COMMUNITY NOISE MEASUREMENT SURVEY RESULTS**

Site	Location	Date	Time Period	L_{eq}	L_{max}	Estimated L_{dn}	Sources
1	Violet Court	7-28-98	Morning	54	68	53	Train & distant traffic
		7-28-98	Afternoon	50	68		Traffic
		7-28-98	Nighttime	44	62		Distant traffic
2	Albiani Park	7-29-98	Morning	45	49	52	Air conditioning unit - distant traffic
		7-28-98	Afternoon	51	72		Distant Traffic
		7-28-98	Nighttime	44	54		Distant Traffic
3	Osborn Park	7-29-98	Morning	52	63	59	Distant Traffic
		7-28-98	Afternoon	59	67		Railroad horn - Traffic
		7-28-98	Nighttime	51	62		Traffic - Crickets

Site	Location	Date	Time Period	L _{eq}	L _{max}	Estimated L _{dn}	Sources
4	Atwater High School	7-29-98	Morning	58	68	61	Traffic - Children
		7-28-98	Afternoon	56	66		Local Traffic
		7-28-98	Nighttime	54	65		Traffic
5	Walter Park	7-29-98	Morning	54	66	55	Local Traffic
		7-28-98	Afternoon	53	63		Local Traffic
		7-28-98	Nighttime	47	50		Local Traffic
6	Bloss Park	7-29-98	Morning	52	56	58	Traffic
		7-28-98	Afternoon	57	71		Traffic - wind blowing through trees
		7-28-98	Nighttime	51	59		Traffic
7	St. Anthony's Church	7-28-98	Daytime	52	73	55	Distant Traffic
			Nighttime	48	72		

Source: Bollard & Brennan, Inc.

4.4.2 REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE GENERAL PLAN

Noise Element

GOAL NO-1. Protect residents from the harmful and annoying effects of exposure to excessive noise.

Policy NO-1.1. Monitor and update data regarding the community's ambient and fixed noise levels.

Policy NO-1.2. Require that an acoustical analysis be submitted for new development in locations where exterior and/or interior noise levels will likely exceed the City's noise standards, so that appropriate mitigation measures can be determined. The analysis must comply with the guidelines identified in (General Plan) Table 6-1 below.

**(GENERAL PLAN) TABLE 6-1
GUIDELINES FOR ACOUSTICAL ANALYSIS**

1.	The analysis shall be the financial responsibility of the applicant.
2.	The analysis shall be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
3.	Noise levels shall be documented with sufficient sampling periods and locations to adequately describe noise conditions and noise sources.
4.	Existing and projected (20 year) noise levels shall be estimated in terms of L_{dn} or CNEL and levels shall be compared to the policies of the Noise Element.
5.	Mitigation shall be recommended to comply with the standards of the Noise Element, giving preference to site planning and design rather than noise barriers.
6.	Noise exposure after the prescribed mitigation measures have been implemented shall be estimated.
7.	A post-project assessment program to evaluate the success of mitigation measures shall be described.

Policy NO-1.3. Encourage the use of site planning and building materials/design as primary methods of noise attenuation.

Implementation Program NO-1.a. Periodically update existing local noise maps as new information about the community's noise environment becomes available to ensure accuracy in land use compatibility planning and appropriate mitigation of noise impacts.

Implementation Program NO-1.b. Adopt and enforce a Noise Ordinance that complies with the State's Noise Insulation Standards. Said ordinance shall contain policies and regulations addressing both ambient and fixed source noise impacts, including but not limited to:

- Permitted days and hours for non-emergency construction (AM starting time to PM cease of operations).
- Permitted days and hours of operation for noise-generating commercial and industrial outdoor equipment (leaf blowers, parking lot sweepers, etc.) on sites located adjacent to residential areas.
- Standards geared primarily toward commercial and industrial land uses, limiting peak noise emissions measured from the property line of the noise generating use.
- Guidelines for noise measurement/ monitoring activities and enforcement.

GOAL NO-2. Protect residents from exposure to excessive transportation related noise.

Policy NO-2.1. Periodically update existing and projected noise contours for all transportation noise sources.

Policy NO-2.2. Utilize (General Plan) Table 6-5 as a general guide when considering the feasibility of new development with respect to existing and future transportation noise levels. Noise levels should be measured from the outdoor activity area of each specified use.

**(GENERAL PLAN) TABLE 6-5
LAND USE COMPATIBILITY GUIDELINES FOR DEVELOPMENT**

Land Use Category		Community Noise Exposure L _{dn} or CNEL, dB					
		55	60	65	70	75	80
Residential, Theaters, Meeting Halls, Churches, Auditoriums	A.						
	C.A.						
	U.						
Transient Lodging, Motels, Hotels	A.						
	C.A.						
	U.						
Schools, Libraries, Hospitals, Child Care, Museums	A.						
	C.A.						
	U.						
Playgrounds, Neighborhood Parks, Amphitheaters	A.						
	C.A.						
	U.						
Office Buildings, Businesses, Commercial and Professional	A.						
	C.A.						
	U.						
Industrial, Utilities, Manufacturing, Agriculture	A.						
	C.A.						
	U.						
Golf Courses, Riding Stables, Outdoor Spectator Sports	A.						

Land Use Category		Community Noise Exposure L_{dn} or CNEL, dB					
		55	60	65	70	75	80
	C.A.						
	U.						

A. Generally Acceptable - No noise mitigation measures are required.

C.A. Conditionally Acceptable - Use should be permitted only after careful study and inclusion of mitigation measures as needed to satisfy the policies of the Noise Element.

U. Generally Unacceptable - Development is usually not acceptable.

Source: 1990 California General Plan Guidelines (Appendix A)

Policy NO-2.3. Prevent new development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation sources which exceed the levels specified in (General Plan) Table 6-6, unless the project design includes effective mitigation measures to reduce interior and exterior volumes to the levels specified in that table.

Policy NO-2.4. Mitigate noise created by new transportation noise sources consistent with the levels specified in (General Plan) Table 6-6 in outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Policy NO-2.5. Consider the significance of noise level increases associated with major roadway improvement projects prior to construction. In instances where mitigation will not reduce noise volumes to the levels recommended in (General Plan) Table 6-6, the following criteria should be used as a test of significance for roadway improvement projects:

- a. Where existing traffic noise levels are less than 60 dB L_{dn} , in the outdoor activity areas of noise-sensitive uses, roadway improvement projects which increase noise levels to 60 dB L_{dn} will not be considered significant.
- b. Where existing traffic noise levels range between 60 and 65 dB L_{dn} in the outdoor activity areas of noise-sensitive land uses, a +3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.
- c. Where existing traffic noise levels are greater than 65 dB L_{dn} in the outdoor activity areas on noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

Policy NO-2.6. Prevent the introduction of new incompatible land uses in areas impacted by existing and projected operations at Castle Airport.

Policy NO-2.7. Require an acoustical analysis when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in (General Plan) Table 6-6 so that noise mitigation may be included in the project design.

Implementation Program NO-2.a. Require development within the Area of Influence for Castle Airport to comply with the noise standards and recommendations contained within the Merced County Airport Land Use Compatibility Plan for that facility.

**(GENERAL PLAN) TABLE 6-6
MAXIMUM ALLOWABLE NOISE EXPOSURE
TRANSPORTATION NOISE SOURCES**

Land Use	Outdoor Activity Areas ¹ L _{dn} /CNEL, dBA	Interior Spaces	
		L _{dn} /CNEL, dBA	L _{eq} , dBA ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60 ³	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	60 ³	--	45
Playgrounds, Neighborhood Parks	70	--	--

¹ The exterior noise-level standard shall be applied to the outdoor activity area of the receiving land use. Outdoor activity areas are normally located near or adjacent to the main structure and often occupied by porches, patios, balconies, etc.

² As determined for a typical worst-case hour during periods of use.

³ Where it is not possible to reduce the noise in outdoor activity areas to 60 dBA, L_{dn}/CNEL or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dBA, L_{dn}/CNEL may be allowed, provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this table.

GOAL NO-3. Protect the economic base of the City of Atwater by preventing incompatible land uses from encroaching upon existing or planned noise producing uses.

Policy NO-3.1. Avoid development of new noise-sensitive uses where the noise levels generated by existing or anticipated non-transportation sources exceeds the noise level standards of (General Plan) Table 6-8 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated.

(GENERAL PLAN) TABLE 6-8

NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY, OR INCLUDING,
NON-TRANSPORTATION NOISE SOURCES

Noise Level Descriptor	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
Hourly L_{eq}	55 dB	45 dB
Maximum Level	75 dB	65 dB
Each of the noise levels specified shall be lowered by five dB for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).		

Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are subject to local regulations, such as a noise control ordinance. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

GOAL NO-4. Prevent the introduction of new fixed noise sources in noise-sensitive areas.

Policy NO-4.1. Mitigate noise created by new proposed nontransportation sources consistent with the noise level standards of (General Plan) Table 6-8 as measured immediately within the property line of lands designated for noise-sensitive land uses.

Policy NO-4.2. Require an acoustical analysis when proposed new nonresidential land uses or the expansion of existing nonresidential land uses is likely to produce noise level exceeding the performance standards of Table 6-8 immediately within the property line of existing or planned noise-sensitive uses.

Implementation Program NO-4.a. Use the development review process to ensure that noise impacts are adequately addressed and sufficiently mitigated in accordance with the State's Noise Insulation Standards and the policies set forth in the General Plan.

Safety Element

GOAL SF-8. Avoid new incompatible development within established Airport Safety Zones.

Policy SF-8.1. Ensure that land use development in the area surrounding Castle Airport is consistent with the applicable provisions of the Merced County Airport Land Use Compatibility Plan.

Implementation Program SF-8.a. The City shall adopt the Primary Compatibility Criteria as outlined in Table 2A of the Airport Land Use Compatibility Plan and apply these criteria in the evaluation of projects proposed within the Castle Airport influence area.

4.4.3 PROJECT IMPACTS AND MITIGATION

STANDARDS OF SIGNIFICANCE

Implementation of the project would result in significant noise impacts if the project would result in any of the following:

- 1) Exposure of persons to, or generation of, noise levels of excess of standards established in the Atwater General Plan Noise Element, Municipal Code, or applicable standards of other agencies;
- 2) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or,
- 3) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

METHODOLOGY

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calveno vehicle noise emission curves was used to predict traffic noise levels within Atwater. The FHWA Model is the traffic noise prediction model currently preferred by the Federal Highway Administration, the State of California Department of Transportation (Caltrans), and most city and county governments, for use in traffic noise assessment. Although the FHWA Model is in the process of being updated by a more sophisticated traffic noise prediction model, the use of RD-77-108 is considered acceptable for the development of General Plan traffic noise contours.

The FHWA Model was used with traffic data obtained from Valley Research and Planning Technologies, published Caltrans traffic counts and Bollard & Brennan, Inc. field surveys to develop Ldn contours for SR-99 and major roadways within the City.

PROJECT IMPACTS AND MITIGATION

Impact 4.4-1 The potential exists for noise levels at existing and future noise-sensitive land uses to exceed acceptable noise exposures as defined by the General Plan. This is considered a **significant impact**.

Traffic

Roadway improvement projects will be required to accommodate buildout of the General Plan. Implementation of the General Plan would result in an increase in noise levels on many of the roadway segments in the Planning Area. **Table 4.4-4** shows the future noise contours for major streets within the Planning Area at buildout of the General Plan, in terms of number of feet from the centerline for the 60 L_{dn} and 65 L_{dn} . The 60 L_{dn} contour is illustrated in **Figure 4.4- 6**.

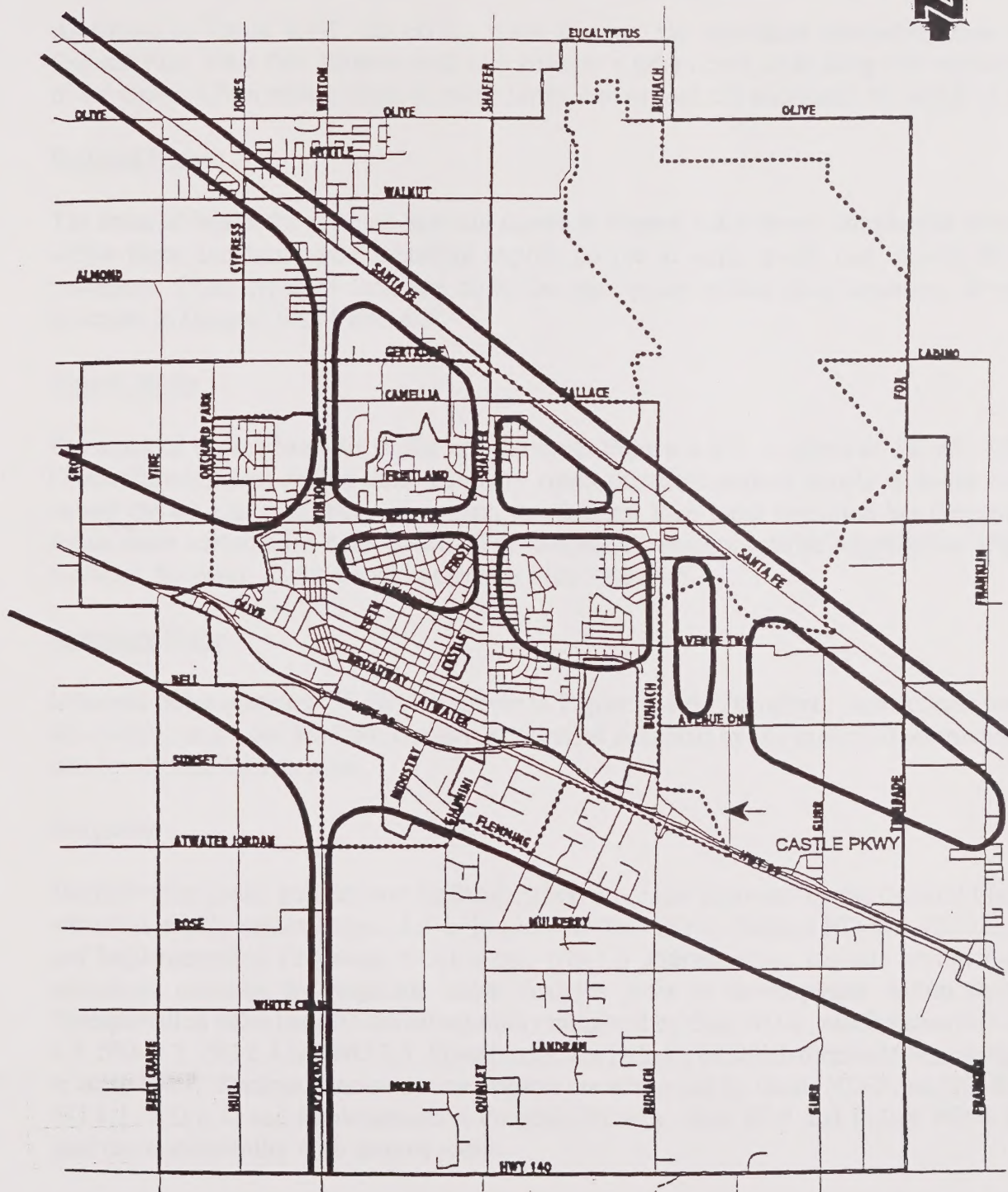
TABLE 4.4-4
TRAFFIC NOISE MODEL DATA INPUTS AND DISTANCES TO FUTURE NOISE CONTOURS

Seg.	Roadway Name	Segment Description	ADT	Day %	Night %	Truck Usage		Speed (mph)	Distance to L _{dn} Contours (feet)	
						Med.	Hvy		60 dB	65 dB
1	State Route 99	Buhach - Shaffer	106,985	75	25	5	20	65	1,437	3,097
2		Shaffer - Winton	80,808	75	25	5	20	65	1,192	2,569
3		Winton - NW City Limits	76,839	75	25	5	20	65	1,153	2,484
4	Applegate Road	South City Limits - Atwater	10,444	83	17	5	5	50	123	265
5	Winton Way	Atwater - Bellevue	35,886	83	17	2	2	45	189	408
6		Bellevue - North City Limits	24,604	83	17	2	2	45	147	317
7	1 st Street	Atwater - Bellevue	13,078	83	17	2	2	40	81	175
8	Giannini	Atwater Jordan - Commerce	5,191	83	17	5	5	45	68	146
9	Shaffer Road	Atwater - Bellevue	30,701	83	17	2	2	45	171	367
10		Bellevue - Santa Fe	23,409	83	17	2	2	45	142	307
11	Buhach Road	Broadway - Juniper	12,937	83	17	5	5	50	142	306
12		Juniper - Santa Fe	13,738	83	17	5	5	50	148	318
13	Atwater Boulevard	Wedel - Winton	28,503	83	17	5	5	45	211	454
14		Winton - Shaffer	34,950	83	17	5	5	45	241	520
15	Commerce Avenue	Applegate - Industry	1,570	83	17	5	5	45	31	66
16	Broadway	Winton - Shaffer	3,540	83	17	2	2	45	40	87
17		Shaffer - 99 (to the South)	8,552	83	17	5	5	45	94	204
18	Juniper Avenue	Winton - Shaffer	4,607	83	17	2	2	40	40	87
19		Shaffer - Buhach	11,034	83	17	2	2	40	72	156
20	Bellevue Road	Gibson - Shaffer	26,981	83	17	2	2	45	156	337
21		Shaffer - Santa Fe	29,960	83	17	2	2	45	168	362
22	Santa Fe Drive	Bellevue - Shaffer	31,418	83	17	5	5	55	290	626
23	Castle Parkway	99 - Santa Fe	35,106	83	17	5	5	55	313	674

Source: Valley Research and Planning Technologies, Bollard & Brennan, Inc., Caltrans.

ADT - Average Daily Traffic

Day%/Night % - percentage of daily traffic on road at day/night



LEGEND:

- - - Project Study Limits
- - - Atwater City Limits

- Sphere of Influence (1984)
- 60 dB Ldn Noise Contours

 Castle Airport & Aviation Development Center

As shown in Figure 4.4-7, the 60 L_{dn} noise contour, the maximum allowable noise level per General Plan Table 6-6, extends well into Atwater's urban core, indicating that implementation of the General Plan would result in noise levels that exceed the maximum for much of the City.

Railroad Noise

The areas of impact for railroad lines are shown in **Figure 4.4-3** above. Residential development within these contours could therefore expose people to noise levels that exceed the 60 Ldn maximum. Other types of land use could be appropriate within these contours, however, as indicated in General Plan Table 6-5.

Airport Noise

The areas of impact from air traffic are shown in **Figure 4.4-4**, in terms of 60, 65, 70, and 75 CNEL Development within these contours could therefore expose people to noise levels that exceed the 60 Ldn maximum. However, the General Plan Land Use Map has designated land within these contours for non-residential development, which would be appropriate within these contours, however, as indicated in General Plan Table 6-5.

Stationary Noise

Industrial noise contours (55 dB) are shown in **Figure 4.4-5**. Therefore, certain land uses within this contour (e.g., the Medium Density Residential proposed by the preferred alternative) would also be affected by this noise.

Mitigation

The following goals, policies and implementation programs proposed by the General Plan Update will substantially reduce Impact 4.4-1. In general, Goal NO-1, Policies NO-1.1, NO1.2, NO 1.3, and Implementation Programs NO-1.a and NO-1.b address noise impacts within the above-referenced contours by requiring noise analyses prior to development within these areas. Transportation noise impacts are substantially mitigated by Goal NO-2, and Policies NO-2.1, NO-2.2, NO- 2.3, NO 2.4 and NO 2.5. Specifically, the policies establish threshold regarding changes in noise levels. Stationary noise source impacts are addressed by Goals NO-3 and NO-4, Policies NO 3.1, NO-4.1, and Implementation Program NO-4.a. Goal SF-8 and Policy NO-8.1 address land use compatibility with airport zones.

The following mitigation is offered to further reduce noise impacts:

MM 4.4-1a Consistent with General Plan policies, noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally 4 to 6 dB per doubling of distance from the source. Setbacks, if utilized as mitigation, shall be identified by the project applicant within subsequent development proposals.

MM 4.4-1b Consistent with General Plan policies, noise exposure may be reduced by placing walls, berms, or other structures such as buildings, as shielding between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver.

Timing/Implementation: Prior to approval of development plans.

Enforcement/Monitoring: City of Atwater Planning Department.

Implementation of the above-listed General Plan goals, policies and programs and **MM 4.4-1a** and **4.4-1b** will reduce this impact to **less than significant**.

SECTION 4.5
AIR QUALITY

This section analyzes the air quality impacts associated with implementation of the proposed land use modifications and policy revisions for the Atwater General Plan Update. The analysis includes a general description of the existing of the Study Area and surrounding region, the technical criteria used to establish the significance of air quality impacts, and the potential impacts of this project.

4.5.1 EXISTING SETTING

CLIMATIC CONDITIONS

The City lies within the central portion of the San Joaquin Valley Air Basin (SJVAB) in Merced County (see **Figure 4.5-1**). It is surrounded by the Sierra Nevada mountain range to the east and the Coast Range toward the west, which direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can contribute to air quality problems. As discussed in the previous section, the climate in Merced County is classified as Mediterranean, with moist cool winters and dry warm summers.

Light winds and atmospheric stability provide frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations. The prevailing winds during the summer are from the north and west. These winds, known as up-valley winds, originate with coastal breezes that enter the San Joaquin Valley through breaks in the coastal ranges, particularly through the Carquinez Strait in the San Francisco Bay Area.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in Atwater are conducive to the containment of air pollutants.

Ozone, classified as a regional pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. Merced County and the City of Atwater are occasionally influenced by precursors emitted in the San Francisco Bay Area; however, sources within the Valley are considered to be a greater influence under most conditions. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.



Other primary pollutants, such as carbon monoxide (CO), may form high concentrations when wind speed is low. During the winter, Atwater experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

AIR POLLUTION SOURCES AND CURRENT AIR QUALITY

In general, there are four major sources of air pollutant emissions in the SJVAB: motor vehicles, industrial plants, agricultural activities, and construction activities. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants, can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). Finally, urban areas upwind from Merced County can cause or generate transported emissions into the Atwater area.

The principal factors that affect air quality in and around Atwater are: (1) the *sink effect*, climatic subsidence and temperature inversions and low wind speeds; (2) *automobile and truck travel*; and (3) increases in mobile and stationary pollutants generated by *local urban* growth. Federal and California ambient air quality standards have been established for the following six "criteria" pollutants: nitrogen dioxide, sulfur dioxide, particulate matter less than 10 microns in diameter (PM₁₀), carbon monoxide, lead and ozone. Criteria pollutants are those for which air quality standards that protect human health have been established. Ozone pollution is the most conspicuous type of air pollution, and is often characterized by visibility-reducing haze, eye irritation, and high oxidant concentrations (i.e., smog). Particulate matter emissions are occasionally visible as dust clouds.

Applicable federal and state standards for each regulated pollution category, along with data from the applicable monitoring sites, are provided in **Table 4.5-1**. The applicable standard for each pollution category, for environmental documentation purposes (i.e., identification of significant impacts), is whichever is the more stringent of the federal and state standards. Based upon information provided in **Table 4.5-1**, the City of Atwater is non-attainment for ozone and PM₁₀. More detailed information concerning the status of criteria pollutants in Atwater and the San Joaquin Valley Air basin is presented below.

Ozone Emissions

The most severe air quality problem in the SJVAB is the high level of ozone. Ozone is not directly emitted into the atmosphere, but instead is a product of chemical reactions between reactive organic gases (ROG), nitrogen oxides and sunlight. Ozone can cause eye irritation and impair respiratory functions. Accumulations of ozone depend heavily on weather patterns and thus vary substantially

TABLE 4.5-1
FEDERAL AND STATE STANDARDS FOR
NONATTAINMENT POLLUTANTS IN THE CITY OF ATWATER

Pollutant	Applicable Standard	Averaging Time	Monitoring Station Data ¹
Ozone	0.09 ppm State 0.12 ppm Federal	Max. Hourly High	0.13 ppm
		Standard Violation	44 days
Carbon Monoxide (CO) ²	9.0 ppm State/Federal 20.0 ppm State	Max. Eight-Hour High	N/A
		Standard Violation	
Particulates (PM ₁₀)	50 ug/m ³	24-Hour High	61 ug/m ³

1) The closest monitoring sites to the City of Atwater are located on South Coffee Avenue and the Health Department in the City of Merced. First highest annual data used.

2) CO monitoring site is in the City of Modesto (Stanislaus County).

Source: California Air Resources Board, 1996, *Air Quality Data Summary*; VRPA.

from year to year. Numerous small sources throughout the region are responsible for most of the of the ROG and NO_x emissions in the SJVAB. Data collected from the nearest ozone monitoring station to Atwater, the South Coffee Avenue station in Merced between 1992 and 1995 recorded several days in which the state ozone standards were exceeded. The San Joaquin Valley Air Basin has been designated a "serious" nonattainment area under federal ozone standards, and a "severe" nonattainment area under state standards. In 1991, the APCD prepared an Air Quality Attainment Plan that contains strategies for the reduction of ozone emissions. In 1992, the ARB postponed a decision on the Plan's ozone strategies until more information was collected.

Suspended PM₁₀ Emissions

PM₁₀ refers to particulate matter less than 10 microns in diameter - those that can be inhaled and cause health effects. Common sources of particulate include demolition, construction activity, agricultural operations, traffic and other localized sources such as from fireplaces. Very small particulate of certain substances can cause direct lung damage, or can contain absorbed gases that may be harmful when inhaled. Particulates can also damage materials and reduce visibility.

Twenty-four hour PM₁₀ standards are exceeded occasionally at the Atwater monitoring station, located at the Health Department building in Merced. The annual geometric mean has also been exceeded during that same time frame. The San Joaquin Valley Air Basin has been classified as a "serious" nonattainment area for PM₁₀ by the federal government. The air basin is also classified

as being in nonattainment of state PM_{10} standards. Under both federal and state Clean Air Acts, the nonattainment area must prepare a plan to bring the area into compliance with the air quality standards. The APCD prepared a PM_{10} Nonattainment Area Plan in 1991, which was subsequently incorporated into California's SIP. In 1994, the APCD approved and submitted a Serious Area PM_{10} Nonattainment Plan after the EPA redesignated the San Joaquin Valley Air Basin as a serious nonattainment area.

On the local level, PM_{10} levels are exacerbated by the potential for wind erosion and dust storms. Because of the sandy nature of area soil, the Natural Resources Conservation Service (formerly the U.S. Soil Conservation Service) has designated the northwestern portion of the planning area as being subject to wind erosion, as shown in **Figure 4.5-2**.

Carbon Monoxide (CO)

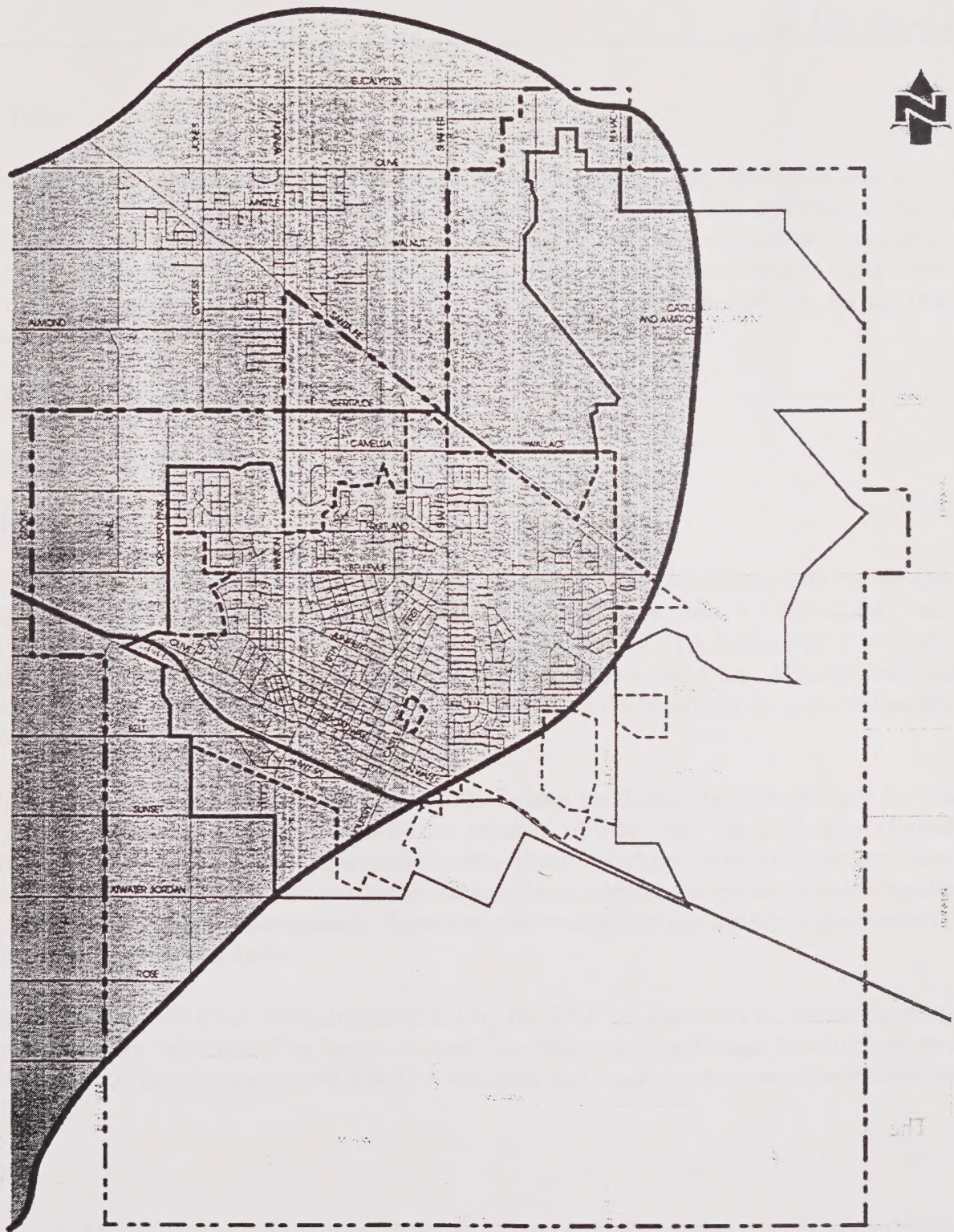
Because carbon monoxide (CO) is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. CO standards have not been exceeded at the closest monitoring station. Within the SJVAB, one urban area is designated as non-attainment for carbon monoxide - Fresno. Since the City of Atwater is not located within the Fresno urban area, Atwater is not considered to be in non-attainment of CO standards.

Nitrogen Dioxide (NO_2)

The major sources of nitrogen dioxide (NO_2), essential to the formation of photochemical smog, are vehicular, residential, and industrial fuel combustion. NO_2 is the whiskey brown colored gas evident during periods of heavy air pollution. NO_2 increases respiratory disease and irritation, and may reduce resistance to certain infections. The standards for NO_2 are being met in the SJVAB, and the District does not expect that the standards will be exceeded in the near future.

Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials and reduce visibility. The standards for SO_2 are being met in the SJVAB, and the District does not expect that the standards will be exceeded in the near future.



LEGEND:

- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- ▨ Areas Subject to Wind Erosion

Castle Airport & Aviation Development Center

Lead (Pb)

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Lead can cause blood effects such as anemia and the inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline continues to increase. The standards for lead are being met in the SJVAB, and the District does not expect that the standards will be exceeded in the future.

4.5.2 REGULATORY FRAMEWORK

AIR QUALITY STANDARDS

Federal

The Environmental Protection Agency (EPA) is charged with implementing national air quality programs. The EPA draws its air quality mandates from the federal Clean Air Act (CAA), enacted in 1970 and subsequently amended. Under the Clean Air Act, the EPA is required to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants. NAAQS established for the six "criteria" pollutants, O₃, CO, NO₂, SO₂, PM₁₀ and Pb. Standards for these pollutants are listed in **Table 4.5-1**.

In June of 1997, the EPA adopted new O₃ and PM₁₀ federal standards. The EPA changed the 1-hour O₃ federal standard of 0.12 ppm to an 8-hour standard of 0.08 ppm. The EPA also adopted an additional standard for suspended particulate matter from PM₁₀ to particulate matter less than 2.5 microms (PM_{2.5}). Although these new standards have been adopted, air quality monitoring data is not available for the new measurements. Therefore, this evaluation of air quality impacts refers only to the pre-June 1997 standards.

Pursuant to the 1990 CAA Amendments (CCAA), the EPA has classified air basins (or portions thereof) as either "attainment" or "nonattainment" for each criteria pollutant, based on whether or not the NAAQS have been achieved. The EPA classifies San Joaquin as a nonattainment area for O₃ and PM₁₀.

State

The state of California enacted its own Clean Air Act in 1988. The state Act establishes California Ambient Air Quality Standards (CAAQS), which are more stringent than federal standards. State air basins are established by the California Air Resources Board (CARB). The state Act classifies areas not meeting state standards ("nonattainment" areas) based on the severity of violation of these

standards: moderate, serious, severe and extreme. Table 4.5-2 below displays a definition of these terms as they are applied to ozone and carbon monoxide. CARB implements State ambient air quality standards, as required in the State CCAA, and cooperates with the federal government in implementing pertinent sections of the federal Clean Air Act. Also, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the State.

TABLE 4.5-2
CALIFORNIA AIR QUALITY NONATTAINMENT CLASSIFICATIONS

Air Pollutant	Classification	Measurements
Ozone	Moderate	0.09 - 0.12 ppm
	Serious	0.13 - 0.15 ppm
	Severe	0.16 - 0.20 ppm
	Extreme	Greater than 0.20 ppm
Carbon Monoxide	Moderate	9.0 - 12.7 ppm
	Serious	Greater than 12.7 ppm

ppm - parts per million

Source: *Air Quality Guidelines for General Plans*, San Joaquin Valley Unified Air Pollution Control District (1994).

Air quality planning in the air basin is conducted by the San Joaquin Valley Unified Air Pollution Control District (APCD). The APCD was formed by an act of the State Legislature in 1991. The Legislature determined that management of the air basin by a single agency would be more effective than by the county APCDs in existence before 1991. The APCD includes all of seven counties and the portion of Kern County northwest of the Tehachapi Mountains. The APCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Merced County and throughout the SJVAB. It does so through both its permitting authority for most types of stationary emission sources and its planning and review activities for other sources. The APCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions.

CARB is the agency with the legal responsibility for regulating mobile source emissions. The APCD is precluded from such activities under state law. However, since passage of the state's Clean Air Act and the 1990 amendments to the federal Act, the APCD is required to implement transportation control measures and is encouraged to adopt indirect source control programs to reduce mobile source emissions. The APCD has entered into a memorandum of understanding with

the transportation planning agencies of the eight counties to enable the agencies' compliance with pertinent provisions of both Clean Air Acts, as well as related transportation legislation.

In response to the requirements of the state Clean Air Act, the APCD prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP) in 1991. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least 5 percent per year until new, more stringent 1988 State air quality standards are met.

For regional pollutants such as ozone and PM_{10} , the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. The APCD has established interim thresholds for certain pollutants, presented in **Table 4.5-3** below. This assessment addresses two types of impact analysis: (1) regional ozone and PM_{10} impacts; and (2) localized construction impacts resulting from PM_{10} emissions.

TABLE 4.5-3
APCD INTERIM EMISSION THRESHOLDS

Non-Attainment Pollutant	Minimum Thresholds Tons/Year
NO_x	10
ROG	10
PM_{10}	15

Source: San Joaquin Valley Unified Air Pollution Control District

For localized pollutants, such as carbon monoxide (CO), an increase in concentrations that would result in a predicted violation of the most stringent State or federal standard [20.0 parts per million (ppm) for 1-hour or 9.0 ppm for 8 hours] is considered to represent a significant impact. This assessment provides for three types of localized area pollutant impact analysis: (1) regional mobile and area source impacts, (2) street and highway traffic impacts; and (3) construction impacts.

Regional/Local

The project site is under the jurisdiction of the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). The SJVUAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources throughout the SJVAB. The SJVUAPCD also has the responsibility for monitoring air quality and setting and enforcing limits for source emissions.

The SJVUAPCD was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP) in response to the requirements of the CCAA. The CCAA requires each nonattainment district to reduce pertinent air contaminant by at least 5 percent. Per year until new, more stringent 1988 air quality standards are met. Three separate, interrelated plans were required by the CCAA to address ozone levels in San Joaquin Valley: *Revised 1993 Rate of Progress Plan*, the *Pose-1996 Rate of Progress Plan*, and the *Ozone Attainment Demonstration Plan*.

The purpose of the *Revised 1993 Rate of Progress Plan* was to show how SJVUAPCD would achieve a 15 percent reduction in ROG emissions between 1990 and 1996, as ROG is a major precursor of the formation of ozone. The purpose of the *Pose-1996 Rate of Progress Plan* was to provide an additional 9 percent reduction in ROG and/or NO_x beyond the aforementioned 15 percent reduction. The third plan, *Ozone Attainment Demonstration Plan*, was developed to demonstrate by computer modeling that the federal ozone standards will be obtained by 1999. The draft PM₁₀ Attainment Demonstration Plan follows two previous PM₁₀ plans and calls for, among other measures, the enhancement of SJVUAPCD's Regulation VIII (Fugitive Dust Rules). Rule 8020 of Regulation VIII specifically addresses emissions from construction activities.

Transportation Control Measures

Until the passage of the state Clean Air Act, the primary role of air districts throughout California was control of stationary sources of pollution such as industrial processes and equipment. With the passage of the state Act and amendments to the federal Clean Air Act, air districts were required to implement transportation control measures (TCMs) and are encouraged to adopt indirect source control programs to reduce area source emissions. These mandates created the need for the APCD to work closely with cities, counties, and with regional transportation planning agencies (RTPAs) to develop new programs. Applicable TCMs are detailed in Section 4.3 Traffic and Circulation.

RELATED GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN

Air Quality

GOAL CO-3. Strive to reduce air emissions and obtain goals set in local and regional air quality attainment plans.

Policy CO-3.1. Cooperate with the San Joaquin Valley Unified Air Pollution Control District (APCD) in implementing air quality improvement plans prepared by the District.

Policy CO-3.2. Encourage land use development projects that would result in fewer adverse air quality impacts, such as mixed use and pedestrian-oriented projects.

Policy CO-3.3. Encourage the use of modes of transportation other than automobiles.

Implementation Program CO-3.a. In cooperation with the APCD, adopt thresholds of significance for air quality impacts that the City can apply in the evaluation of development projects for which the City has received an application, and for use in developing mitigation measures that may be necessary.

Implementation Program CO-3.b. Implement the sections of the Circulation Element of the City's General Plan that encourage the use of alternative modes of transportation, such as the development of the bikeway system.

Implementation Program CO-3.c. Incorporate as a condition of approval for projects that include significant grading or other earth moving activities measures that control emissions of dust.

Wind Erosion

GOAL SF-7. Prevent activities that contribute to increased wind erosion.

Policy SF-7.1. Require all projects that involve grading or other earth moving activities to implement dust control measures to reduce dust emissions.

Policy SF-7.2. Cooperate with other appropriate law enforcement and emergency service agencies in planning for and implementing measures that reduce potential hazards caused by significant dust storms.

Implementation Program SF-7.a. The City planning staff, in cooperation with the Public Works and Building Departments, shall prepare a standard set of conditions for the control of dust emissions during grading and other earth moving activities. These standards shall not preclude the placement of other dust control conditions that may be deemed necessary. No standard conditions shall be removed unless the project applicant demonstrates that the condition will not be necessary to attain dust control objectives.

4.5.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

For the purposes of this analysis, an impact is considered significant if one or more of the following conditions occur from implementation of the project:

- 1) Exceeds regional air quality emission standards, as per ²Table 4.5-~~3~~³ and Table 4.5-~~4~~³. For nonattainment pollutants, any net increase in regional emissions is considered significant;
- 2) Exceeds local air quality emission standards. For localized pollutants, such as CO, an increase in concentration that would result in a predicted violation of the most stringent of state or federal standards is considered significant;
- 3) Results in significant construction related impacts; or,
- 4) Results in the creation of objectionable odors.

METHODOLOGY

As noted above, the SJVAB has already been designated as nonattainment for PM₁₀ and ozone, therefore any additional emission of these pollutants is considered significant.

To analyze the Alternative's "worst case" CO concentrations along such roadways, the analysis methodology considered the highest second annual maximum CO concentration reported in 1995, using approximately 10.0 PPM as an estimate of the background concentration for the 1 hour standard and 3.6 PPM as an estimate of the background concentration for the 8 hour standard (source: California Air Resources Board (CARB) annual publications). Seventy-five degrees Fahrenheit was used as the mean summer temperature in Atwater. The emissions rates used in this analysis were obtained from the EMFAC7 model contained in Air Quality Analysis Tools (AQAT), a suite of air quality tools jointly developed by Caltrans and CARB.

Thirty-two (32) representative roadway segments and eight (8) receptor sites were chosen to conduct the analysis. The CALINE4 model was run using the "worst case" scenario. Then the maximum CO concentration generated by the Project was added to the background CO concentration of approximately 10.0 PPM for the 1 hour standard and 3.6 PPM for the 8 hour standard.

PROJECT IMPACTS

Construction Impacts

Impact 4.5.1 The proposed project would generate PM₁₀ emissions during grading and site preparation activities. PM₁₀ generated during these activities would exceed significance thresholds. This would be a **significant** impact.

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion

over exposed earth surfaces. Clearing and earthmoving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. As noted above, portions of the Planning Area are subject to dust storms, a hazard that is exacerbated when soils are left exposed.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulates. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the project area and may require frequent washing during the construction period. Further, asphalt paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone. Implementation of the following provisions of the proposed General Plan Update will substantially reduce **Impact 4.5-1: CO-3, CO-3.1, CO-3.a, CO-3.c, SF-7, SF-7.1, SF-7.2, and SF-7.a**. Additional mitigation is offered below:

MM 4.5-1a

The following mitigation measures are designed to minimize fugitive dust during grading and construction activities of development projects.

- All active portions of construction sites, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used.
- All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour.
- All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of discing for weed control and seeding and watering inactive portions of the construction site until grass is evident.
- Construction site vehicle speeds shall be limited to 15 miles per hour.

- If used, petroleum-based dust pallitives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials.
- Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated from construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping.
- All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications.
- During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time.
- When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines.
- Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways.

Significance After Mitigation

Although the SJVAB has already been determined as nonattainment status for PM_{10} (and any subsequent emission of this pollutant is considered significant), construction impacts are temporary. Thus, the impact is only significant for the duration of these activities. Implementation of the above-listed provisions of the proposed General Plan and MM 4.5-1 will reduce Impact 4.5-1 to the extent possible, and this is considered **less than significant**, given the duration of the impact.

Operational Impacts

Impact 4.5.2 **Operation of the proposed project would generate both mobile source and area source criteria air pollutants and would increase total criteria air pollutant emissions in the region. Therefore, this impact is considered significant.**

Mobile Source Emissions

Based on the traffic generation and distribution performed to determine the transportation impacts of the Project Alternatives, the project is expected to generate automobile traffic that will affect air quality along adjacent streets and highways. Along adjacent streets and highways. Adjacent to such roadways, the measurable pollutant most significant is CO.

Results of the year 2020 CO concentration analysis are contained in **Table 4.5-5**. Based upon the results, CO concentration levels will exceed air quality standards with the project at two of the five receptor sites analyzed for an eight hour period. However, the average CO concentration levels at all eight sites are within the State's air quality standards. Therefore, this impact is **less than significant**.

Area Source Emissions

Implementation of the project will ultimately result in the development of residential and non-residential development. Operation of these land uses will involve not only the generation of additional traffic (and resulting increase in emissions), but also emissions from stationary sources, such as barbeques, fireplaces, industrial emission and other operational emissions. Long-term emissions are quantified in terms of "regional impacts". As noted above, the air basin is already designated as nonattainment for ozone and PM₁₀. Therefore, any increase in emission of these pollutants is significant. Also noted above: CO levels are not projected to increase to significant levels with implementation of the project. Furthermore, increased levels of NO₂, SO₂ and Pb have been identified as less than significant.

Although mitigation is available to reduce the emission of ozone and PM₁₀, a significant impact already exists. Therefore, any increase due to implementation of this project would represent a **significant unavoidable** impact.

**TABLE 4.5-4 2020
PROJECTED CO EMISSIONS**

RECEPTORS		AIR QUALITY STANDARDS				NO BUILD				PREFERRED			
						ALTERNATIVE				ALTERNATIVE			
						Air Quality		Standards		Air Quality		Standards	
		Federal		State		Levels		Exceeded?		Levels		Exceeded?	
#	Description	1hr	8hr	1hr	8hr	1 hr	8hr	1 hr	8hr	1 hr	8hr	1 hr	8hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	10.0	3.6	NO	NO	10.0	3.6	NO	NO
1 Residential - between Fleming & Atwater		35.0	9.0	20.0	9.0	12.4	5.8	NO	NO	12.8	6.4	NO	NO
2 Residential - Sunset between Applegate & Hull		35.0	9.0	20.0	9.0	11.1	4.7	NO	NO	11.2	4.8	NO	NO
3 Residential - Avenue One between Buhach & Gurr		35.0	9.0	20.0	9.0	12.4	6.0	NO	NO	11.7	5.3	NO	NO
4 Residential - Camellia between Winton & Shaffer		35.0	9.0	20.0	9.0	11.5	5.1	NO	NO	NA	NA	NO	NO
5 Residential - Shaffer & Juniper		35.0	9.0	20.0	9.0	12.4	6.0	NO	NO	12.6	6.2	NO	NO
6 School - Buhach & Avenue Two		35.0	9.0	20.0	9.0	12.2	5.8	NO	NO	12.5	6.1	NO	NO
7 School - Camellia & Shaffer		35.0	9.0	20.0	9.0	12.2	5.8	NO	NO	12.6	6.2	NO	NO
8 School - Juniper & 5th		35.0	9.0	20.0	9.0	11.7	5.3	NO	NO	11.9	5.5	NO	NO

Mitigation

In addition to those listed above, the following provisions of the proposed General Plan Update will reduce **Impact 4.5-2: CO-3.3 and CO-3.b**. Additional mitigation is offered below:

MM 4.5-2a The following mitigation measures are designed to minimize fugitive dust during grading and construction activities of development projects.

- The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions at the power plant.
- Less polluting alternatives to wood stoves shall be required, in accordance to Rule 4901, where feasible, e.g. CEC certified natural gas fireplace appliances which are 70% efficient and create far less pollution than wood stoves.
- Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits.
- Design guidelines for Project developments shall consider innovative solutions to encourage transit ridership and other alternative transportation modes.
- Ingress and egress points in new development shall be designed to minimize idling vehicle emissions.
- Use of alternative fuel vehicles shall be encouraged in vehicle fleets and new facilities shall be designed to set aside space for refueling or electrical recharging of vehicles.
- The City shall promote the use of signal synchronization, one-way streets, computerized traffic controls, removal of unnecessary signals, and other engineering techniques to decrease idling time and maximize the speed of traffic on congested surface streets.
- Implementation of planned street and highway, transit, and bikeway improvements necessary to relieve congestion and reduce idlings.
- Conformance with provisions contained in the Merced County Congestion Management Program (CMP).

- Encourage additional wall and attic insulation beyond existing building code (Title 24) requirements for all commercial/residential developments.
- Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all new commercial/residential developments.
- Review the orientation of residences to insure reductions in energy use.
- Encourage the use of HVAC equipment with a SEER of 12 or greater.
- Conversion of one or more public service vehicles from gasoline or diesel to compressed natural gas (CNG), or electric powered. Examples include city or county owned vehicles, U.S. Postal Services vehicles, and school buses.
- Allow for the retirement of pre-1974 vehicles to offset the emissions from the Project.
- Implement the SJVUAPCD's Regulation VIII - Fugitive Dust/PM10 Synopsis also may be applied. The purpose of Regulation VIII is to reduce the amount of injected into the ambient air from man-made sources

Significance After Mitigation

There are potentially significant impacts to air quality that could result from implementation of the Preferred Alternative. Mitigation provided may reduce project specific impacts to less than significant levels. However, it is probable that future development in the City of Atwater will result in **significant unavoidable** impacts on air quality.

SECTION 4.6
SURFACE HYDROLOGY, GROUNDWATER
AND WATER QUALITY

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

This section discusses and analyzes the surface hydrology, groundwater, and water quality characteristics of the Planning Area, including existing drainage patterns, agricultural drainage, flood hazards, and groundwater quality. This section is based on information contained in the *Due Diligence Working Paper for the Atwater General Plan Update* (PMC, 1998), as well as a review of relevant reports, studies, and information from the Federal Emergency Management Agency (FEMA).

4.6.1 EXISTING SETTING

SURFACE WATERS

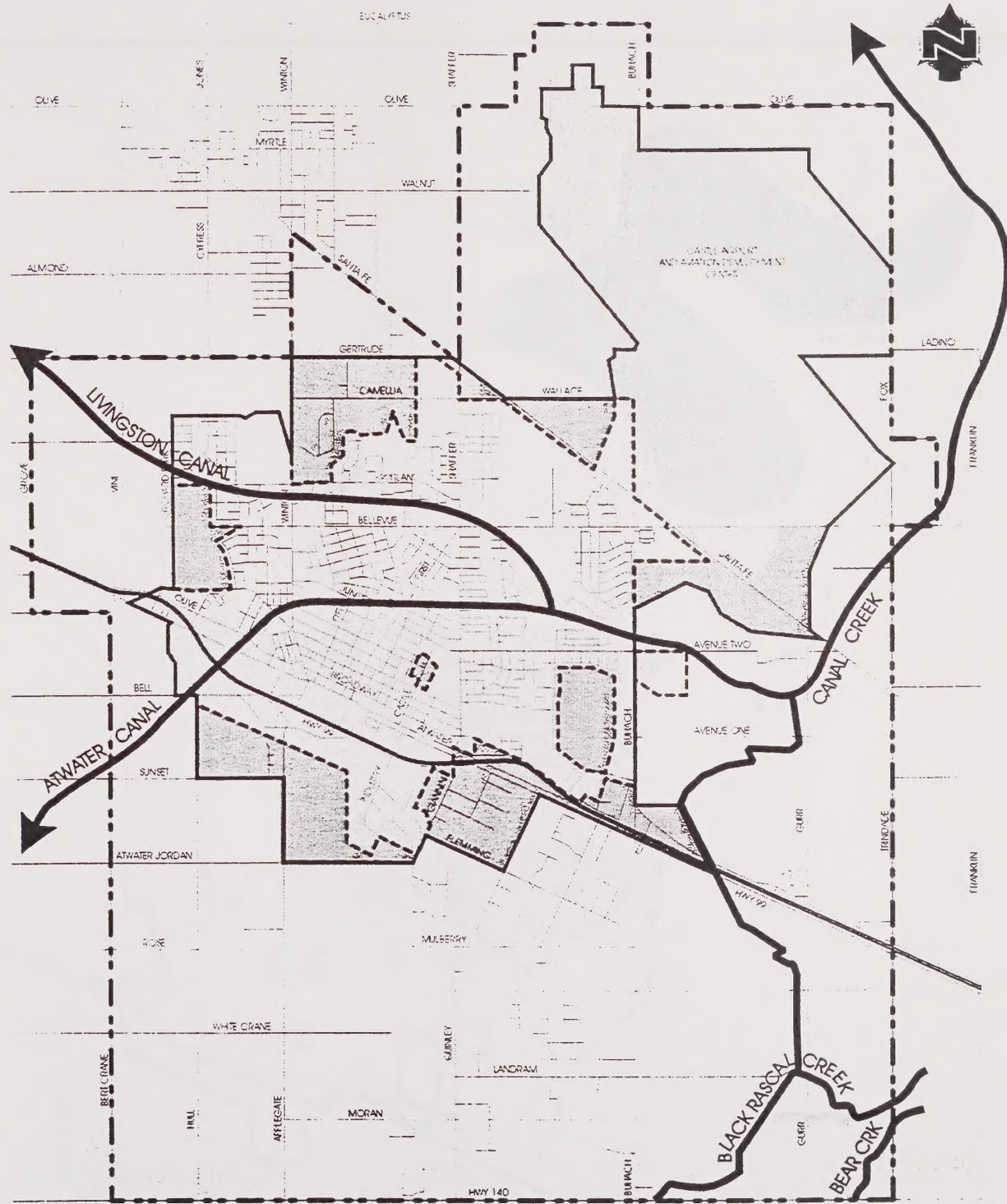
There are few natural streams in the Planning Area. Canal Creek lies adjacent to the southeastern boundary of the CAADC site. South of the City, the Parreira Drain and Atwater Drain accept storm water drainage. Bear Creek and Black Rascal Creek traverse the far southeastern corner of the Planning Area. More significant are the irrigation canals, managed by the Merced Irrigation District (MID). These include the Livingston Canal and the Atwater Canal, both of which pass through the City itself. The Escaladian Canal is located in the northern portion of the Study Area. The Main Canal diverts water from the Merced River into Canal Creek, which in turn feeds the Livingston and Atwater Canals. This network is shown in **Figure 4.6-1**.

There are no large surface bodies of water within the Planning Area. The current General Plan indicated that "Castle Dam" would be constructed by the U.S. Army Corps of Engineers northeast of the CAADC site. The dam was completed in 1992 and created "Castle Reservoir" which is shown in **Figure 4.6-2**. Located approximately four miles northeast of the City, Castle Reservoir has a maximum storage capacity of 10,400 acre-feet, and it is held back by an earthen dam 52.5 feet high and 2,250 feet long at its crest. Castle Reservoir is the closest reservoir to the City. MID manages two reservoirs northeast of the City. Both Lake McClure and Lake McSwain are used to provide irrigation water and to generate electricity.

GROUNDWATER RESOURCES

Groundwater supplies the domestic water needs of the City. Static groundwater levels in the Atwater area are generally between 55 and 89 feet below ground level. The groundwater comes from the San Joaquin-Tulare Valley Storage Basin, an aquifer that serves the entire Central Valley. Groundwater quality is better in the higher valley areas and decreases toward the valley trough.

Although static groundwater levels in the Atwater area are generally between 55 and 89 feet below ground level, the Merced County General Plan notes the presence of high water tables within the Planning Area boundary (**Figure 4.6-3**). High water tables occur where dense layers of heavy clay soils block the downward percolation of applied or naturally occurring moisture into the

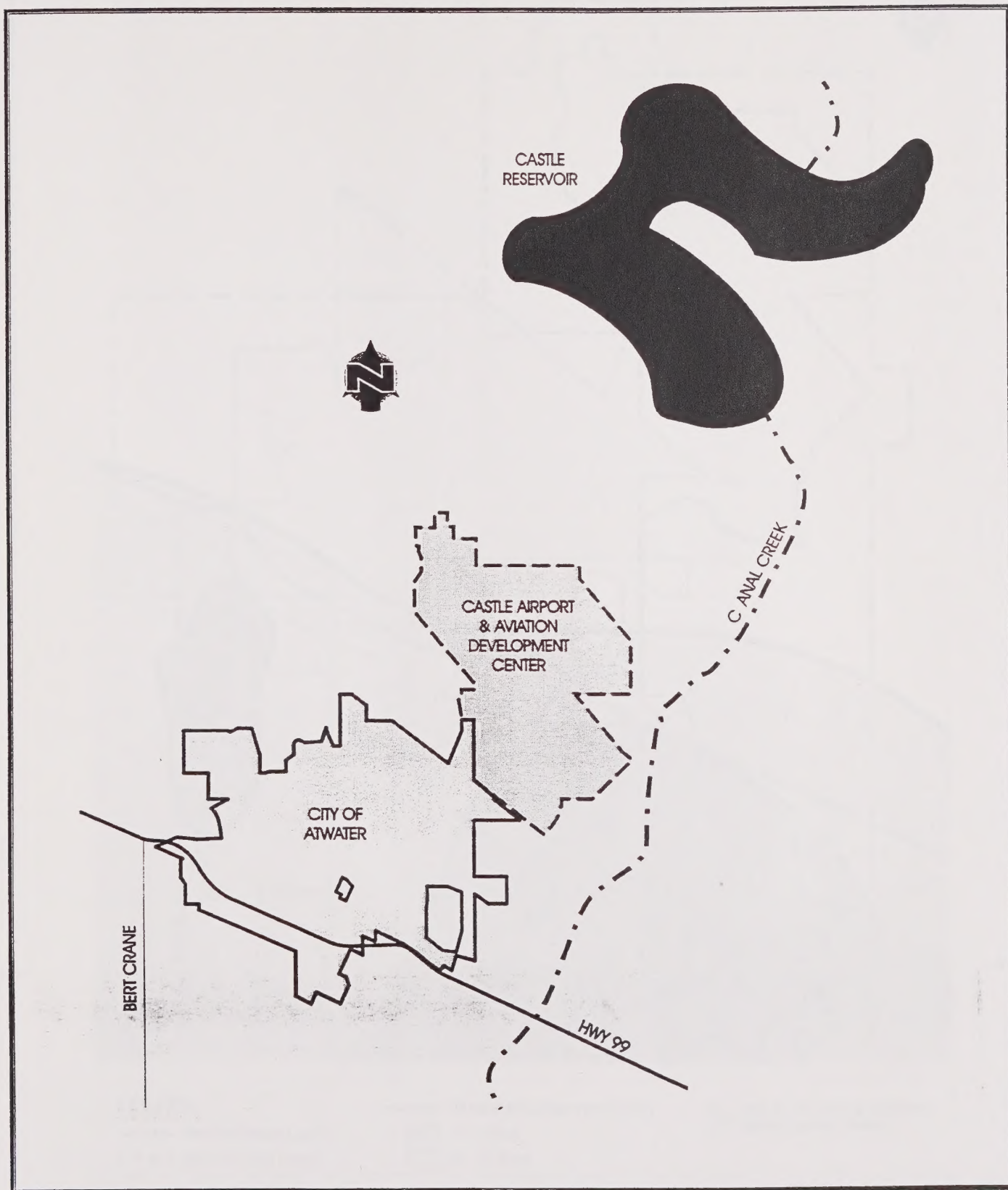


LEGEND:

- -- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- Major Canal & Waterways

 Castle Airport & Aviation Development Center



4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

substrata. Most of the areas subject to this condition are located south of Highway 99. The depth to the water table within the affected areas varies from 0 to 10 feet.

WATER QUALITY

In 1989, the Merced County Planning Department noted that nitrate was a groundwater quality problem in the Atwater area. Nitrate pollution problems were attributed to fertilizers, animal manures, treated and untreated sewage, geologic sources and plant residues. It was also noted that shallow wells northwest of the City were contaminated with pesticides, mainly dibromochloropropane (DBCP). DBCP, a pesticide used to control soil nematodes, was heavily used by area farmers until it was banned in 1977 because it was identified as a carcinogen. Pollution of shallow wells from DBCP is widespread.

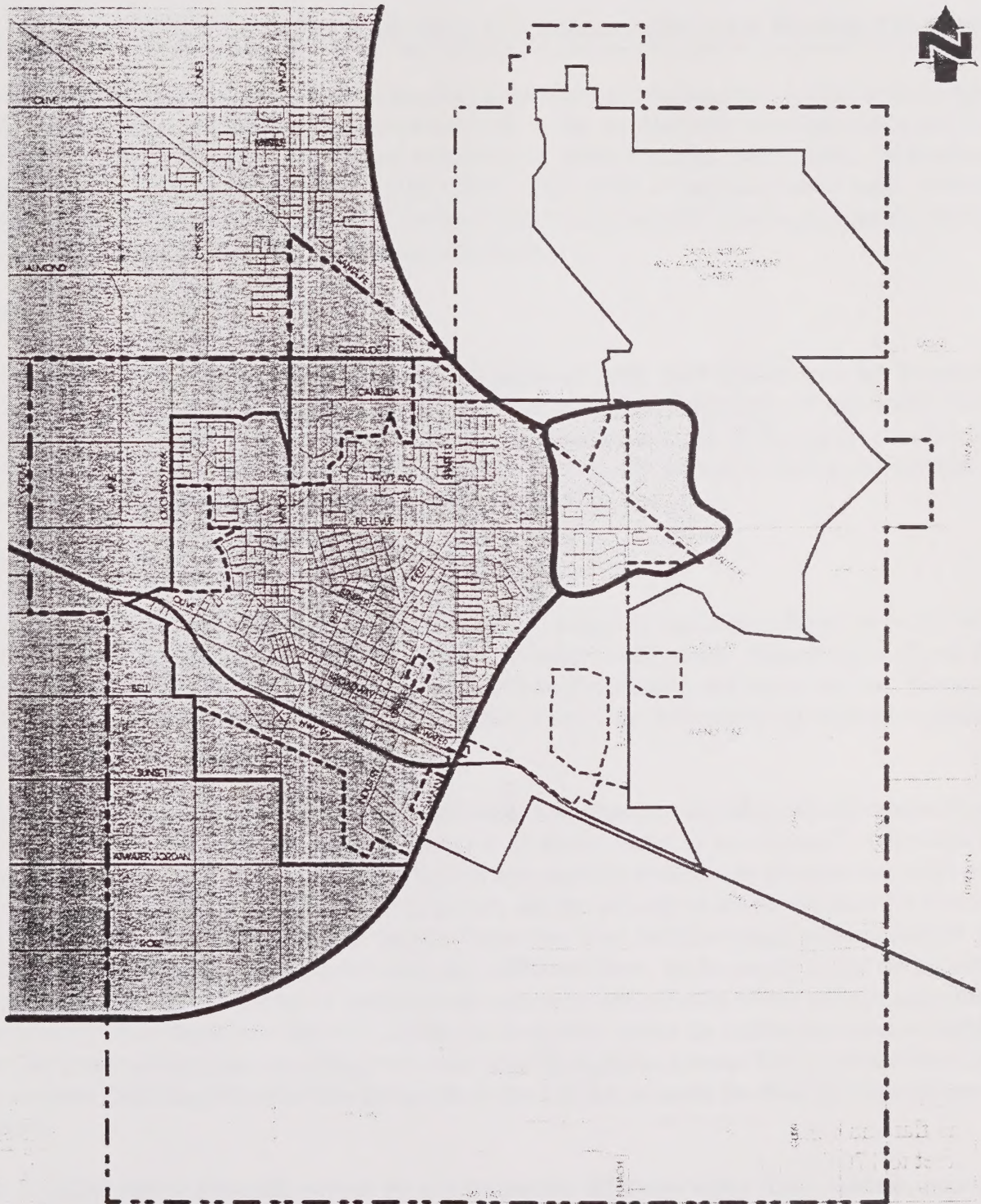
Contamination of groundwater resources has also occurred as a result of past operations at the former Castle Air Force Base. Disposal practices have contaminated local groundwater with trichloroethylene (TCE), 1,2-dichloroethane (1,2-DCA), 1,2-dichloroethylene (1,2-DCE), tetrachloroethylene (PCE), carbon tetrachloride, benzene, methylene chloride, dibromochloromethane and chloroform, among others. Three contaminant plumes have been identified underneath the CAADC site, with the main TCE plume covering most of the area south of the airfield and extending off site. The EIR for the Castle Reuse Plan stated that a Remediation Investigation/Feasibility Study (RI/FS) was being finalized. The RI/FS identified the plumes as Operable Units 1 and 2 (OU-1 and OU-2). OU-1 was in a Phase 1 Remedial Action stage, which involves modeling and evaluation of a groundwater pump and treat pilot study. OU-2 was in the Remedial Design/Remedial Action stage. Groundwater Quality is displayed graphically in **Figure 4.6-4**.

DRAINAGE AND FLOODING

Regional Hydrology

Topography

The City of Atwater lies within the San Joaquin Valley, as does the entire Planning Area. The Valley is flat and contains few elevated features. Elevations within the City vary little, ranging from 145 feet to 170 feet above sea level. The official elevation of Atwater is 150 feet above sea level. Few natural watercourses traverse the Study Area - two of the most significant waterways are the Livingston and Atwater Canals, which are man-made channels. There are no significant topographical features within the Planning Area.



LEGEND:

- Project Study Limits
- ... Atwater City Limits

- Sphere of Influence (1984)
-  DBCP and Nitrates
-  Trichloroethylene



**Castle Airport & Aviation
Development Center**

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

The Soil Survey of the Merced Area, conducted by the Soil Conservation Service (now the Natural Resources Conservation Service), indicates that soils in the Atwater area are of the Delhi-Atwater association. This association consists of well-drained, wind-modified, sandy soils. In scattered depressions, however, the water table is high. Delhi soils consist of sand and loamy sand. Atwater soils are similar, but have a slight accumulation of clay in their subsoil. Drainage characteristics of area soils is detailed in Section 4.7 (Geology and Soils).

Climate

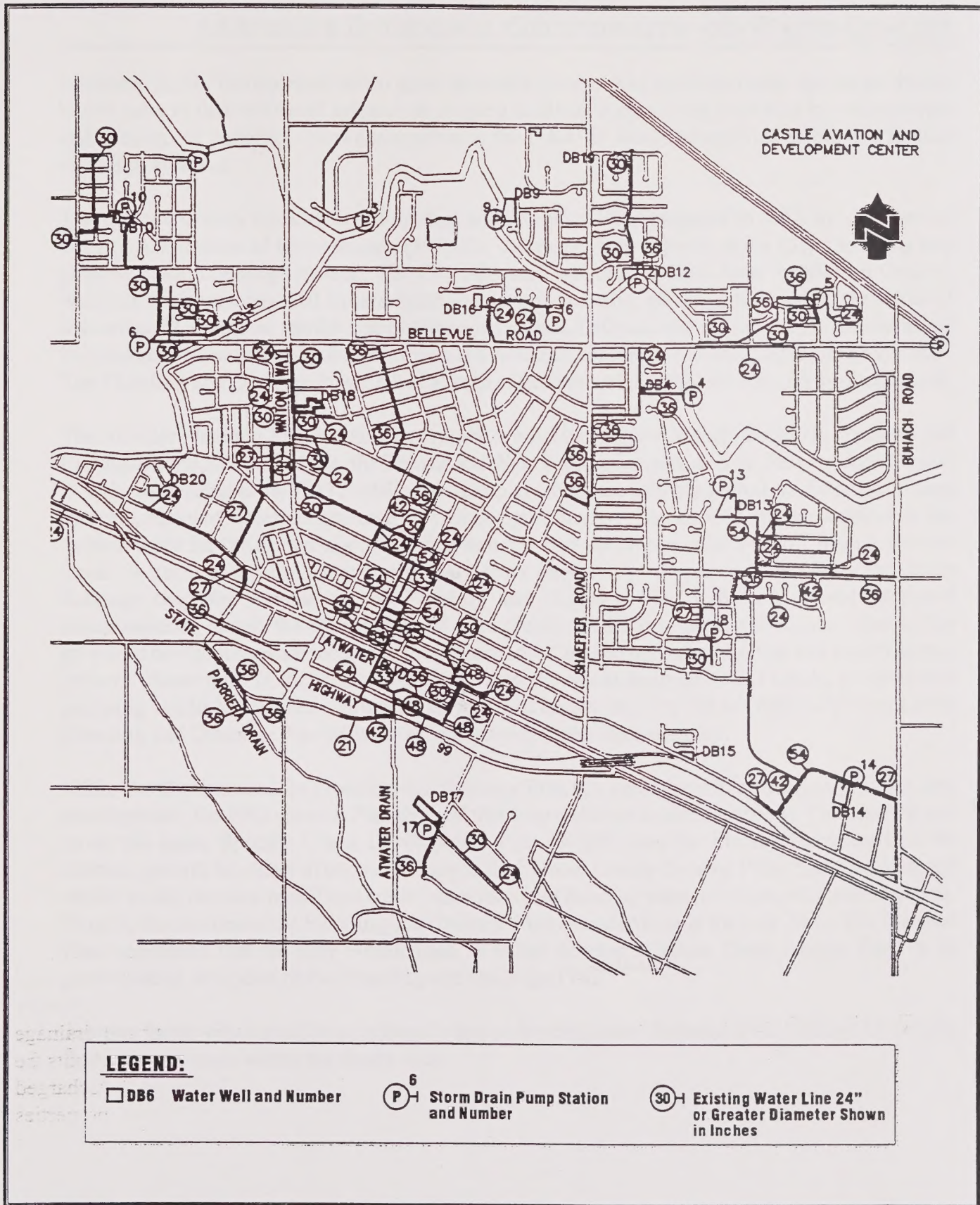
The climate in the Atwater Study Area is Mediterranean, with mild winters and hot summers. Temperatures range from an average daily minimum of 36 degrees Fahrenheit (°F) in January to an average daily maximum of 94°F in July. Temperatures may exceed 100°F during the summer and fall below freezing in the winter months. Precipitation occurs primarily during the months of November through March and averages 11.8 inches per year.

Storm Drainage

The City's storm drainage system generally consists of retention basins and detention basins with a discharge to a natural drain or Merced Irrigation District (MID) canal. **Figure 4.6-5** shows the pipeline facilities 24 inches or greater in diameter, storm drain basins and pump stations. There are 13 detention basins and 16 storm water lift stations in the City, with pumping capacities ranging from 75 gpm to 8,000 gpm.

The City has an agreement with MID for storm water discharge that includes a fee for maintenance of the canal system. MID has a limited amount of storm water to be disposed of through its irrigation system, due to the canal system having less capacity as it moves downstream. MID sets a maximum rate of discharge for each development, and the water from the development is metered into the canal system. MID requires that discharge into their facilities must cease whenever the facility at the point of discharge cannot carry any additional flow. It also requires that the interface between the collection and disposal systems must have a detention basin, which collects any runoff that cannot be discharged into the MID facility until capacity within the facility becomes available. The City drains a major portion of its storm drain water through the Atwater Drain, south of the City. The Atwater Drain has a fixed discharge rate; thus, the City has to meter the flows through the small channel.

The CAADC site is presently served by a combination of storm water lines, surface drainage facilities and channels. All of the channels eventually merge, and the collected storm water exits the Castle property at the southernmost corner of the site adjacent to Santa Fe Drive. The discharged storm water is emptied into Canal Creek, which is maintained by MID. The northeast properties utilize the same type of drainage system that discharges in Canal Creek in the same vicinity. Most of the CAADC facilities generally employ direct discharge without detention. More recent



4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

construction has incorporated storm drain detention ponds. The facilities delay discharge during heavy rains so that additional demand on existing facilities is spread out over time by containment and subsequent pumping. New construction at the CAADC would be required to provide similar detention systems.

The Merced County Critical Area Flooding and Drainage Plan, prepared in 1983 for the Merced County Association of Governments (MCAG), discussed some aspects of the City's existing and proposed storm drainage system. The City is located within a "Critical Area" of Merced County, which is approximately 180 square miles in size and includes, along with Atwater, the cities of Merced and Livingston and the communities of Planada, LeGrand and Winton. This area received its designation due to the population growth and its anticipated impact on existing drainage systems. The Flooding and Drainage Plan looked at both collection and disposal systems for surface runoff.

The Atwater Planning Area has six disposal waterways that cross or are adjacent to it. They are the Livingston and Atwater Canals, the Buhach and West Buhach Laterals, and the Parriera and Atwater Drains. According to the 1983 Flooding and Drainage Plan, the City has a number of storm drainage systems, many of which do not have 10-year design capacity. The level of service required in the Critical Area for the design of collection systems is that which can collect runoff from a 10-year storm (a storm of a particular intensity that occurs once every 10 years on average). The storm drainage map for Atwater in the Flooding and Drainage Plan indicated several proposed improvements, mainly the construction of more pipelines for storm water collection. Most of the proposed new pipelines are located in the center of the City and in its southeastern and southwestern corners. Since most of the proposed drainage systems would drain into MID canals, ponding and pumping would be required. However, as discussed below, the City has not officially adopted the Flooding and Drainage Plan with the accompanying storm drainage map.

While the City has used the Flooding and Drainage Plan as a guide for infrastructure layout for new development, the 1992 General Plan deemed that plan deficient in some respects. The plan did not cover the entire Specific Urban Development Plan (SUDP) area for Atwater recognized as the ultimate growth boundary of the community in the Merced County General Plan. Land use changes which would increase runoff and could cause localized flooding were not taken into consideration. Finally, the timeline of the Flooding and Drainage Plan extended to only the year 2000. The General Plan concluded that the City would need to either develop a Storm Drain Master Plan or to participate in an update of the Flooding and Drainage Plan.

Another factor which must be considered when addressing storm drainage is the location of various flood hazard zones within the Study Area.

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Flooding Problem Areas

Although most of the City and the Planning Area lie outside the 100-year floodplain designated FEMA, almost all of the southeastern corner of the Planning Area is within the 100-year floodplain (**Figure 4.6-6**). This area is bounded approximately by Bellevue Road to the north and Buhach Road to the west. South of Highway 99, most of the McSwain area is within the floodplain.

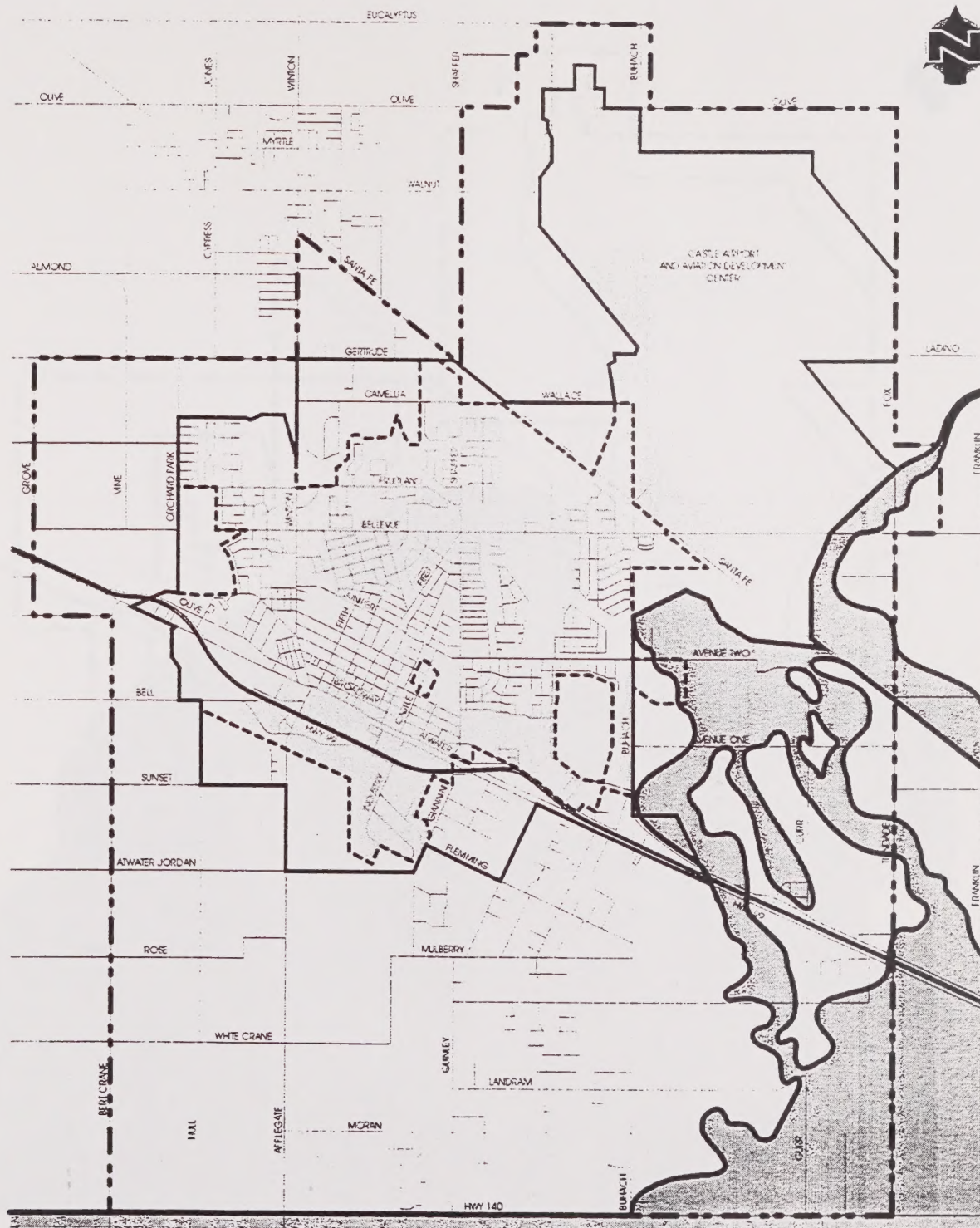
The area adjacent to Canal Creek is one of the places subject to possible flooding. In 1992, the U.S. Army Corps of Engineers constructed Castle Reservoir, a flood control reservoir on Canal Creek. Located approximately four miles northeast of the City, the reservoir has a maximum storage capacity of 10,400 acre-feet, and it is held back by an earthen dam 52.5 feet high and 2,250 feet long at its crest. Castle Reservoir is the closest reservoir to the City.

Atwater storm drainage is routed into Merced Irrigation District (MID) canals, Parreira, and Atwater drains via drain lines. MID has expressed concern about the adequacy of canal capacity as the City develops.

Potential for Dam Failure/Inundation

Protection from flood hazards created by dam failures is critical to the safety and well-being of Atwater residents. Dam failures can result from a number of natural or man-made causes, such as earthquakes, erosion, improper siting, improper maintenance, rapidly rising flood waters and structural/design flaws. The ability to provide warning for potential victims of flooding from dam failure is influenced by the type of dam constructed, the frequency of inspections for structural integrity, the flood wave arrival time, the ability to notify persons downstream and their ability to evacuate. Aside from loss of life, damage to property and displacement of people, hydroelectric facilities on dams that fail would suffer damage. This could have an impact on life support systems in communities outside the immediate hazard areas. A failure of one of MID's dams that generate electricity could affect supply to the CAADC site, within which the Castle Medical Center is located. Should more of the City choose MID as its electricity supplier and distributor, those customers would likewise be affected.

The Merced County General Plan contains maps depicting potential dam failure inundation areas. As indicated in **Figure 4.6-7**, failure of the Lake Yosemite dam, northeast of Merced, would inundate most of the City. Only the CAADC site and the far northern and northwestern peripheries of the City would be outside the flood area. According to discussions with representatives from the Army Corps of Engineers, a dam inundation area map is not currently available for Castle Reservoir.



LEGEND:

- Project Study Limits
- - - Atwater City Limits

- Sphere of Influence (1984)
- 100 Year Flood Area



Castle Airport & Aviation Development Center

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Flood Safety

Attachment B of the City's Emergency Plan identifies primary and secondary evacuation routes. Primary evacuation routes include Atwater Boulevard, Winton Way, Shaffer Road, Buhach Road, Santa Fe Drive and Bellevue Road. Secondary routes include Juniper Avenue, Broadway, and First, Third and Fifth Streets. Both railroad lines are identified as "barriers". State Highway 99 carries the same designation, most likely because of its limited access. However, the highway could serve as a major evacuation route, depending on the circumstances. The location of an emergency incident will influence the choice of evacuation routes used. A flood in the 100-year zone may close off Buhach Road, Santa Fe Drive and State Highway 99, for instance.

4.6.2 REGULATORY FRAMEWORK

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD DISCHARGE PERMITS

The Central Valley Regional Water Quality Control Board (CVRWQCB) issues permits for activities that could cause impacts to surface water and groundwater, including construction activities. Development of sites that result in a disturbance of five or more acres require a National Pollutant Discharge Elimination System (NPDES) construction activities permit. The NPDES storm water permitting program, under Section 402(p) of the Federal Clean Water Act, is administered by the CVRWQCB on behalf of the U.S. Environmental Protection Agency (EPA). The permit would require that the following general measures be implemented during construction activity:

- Eliminate or reduce non-storm water discharges to storm water systems and other waters of the U.S.;
- Develop and implement a storm water pollution prevention plan (SWPPP); and,
- Perform inspections of storm water control structures and pollution prevention measures.

CVRWQCB BASIN PLAN

As part of its program to protect water quality, the CVRWQCB's recently revised Basin Plan addresses water quality in terms of regulating septic systems, pesticide use, agricultural commodities, storm water and agricultural drainage.

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

RELATED GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN

Water Quality

GOAL CO-1. Support efforts to monitor and remediate existing groundwater contamination within the planning area.

Policy CO-1.1. Encourage responsible agencies to continue monitoring and remediation of contamination of the aquifer underneath the CAADC site.

Policy CO-1.2. Encourage the County of Merced to pursue remediation of groundwater contamination in the unincorporated portions of the Planning Area.

Implementation Program CO-1.a. Encourage the efforts of the Merced County Environmental Health Department to identify and monitor areas of groundwater contamination in the City limits and unincorporated portions of the Planning Area. Work with appropriate agencies to ensure cleanup of identified sites.

GOAL CO-2. Prevent the creation of new groundwater contamination or the spread of existing contamination.

Policy CO-2.1. Work with the Regional Water Quality Control Board (RWQCB) to protect, improve and enhance groundwater quality in the region.

Policy CO-2.2. Educate the public on the proper handling and disposal of hazardous materials and household hazardous waste.

Implementation Program CO-2.a. In cooperation with other appropriate agencies, establish and participate in an education program for the public that may include brochures, mailings and media advertisements.

Flooding

GOAL SF-4. Avoid damage to persons and property resulting from flooding.

Policy SF-4.1. Restrict development within the 100-year floodplain in a manner that effectively prevents damage to persons and property.

Implementation Program SF-4.a. As conditions for development within the 100-year floodplain, the City shall require that the finished floor elevation of the project be at least one foot above the 100-year flood elevations shown on the Flood Insurance Rate Map. The project applicant shall also

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

be required to demonstrate that the project would not impact other properties or significantly contribute to a cumulative impact.

Implementation Program SF-4.b. The City shall prohibit any land use activities within the 100-year floodplain that could pose a hazard to people or property in the event of a flood, such as the storage of flammable or hazardous materials.

Implementation Program SF-4.c. The City shall encourage the construction of regional flood control facilities that will increase protection and/or eliminate existing flood zones within the Planning Area.

Dam Inundation

GOAL SF-5. Reduce potential flood impacts resulting from dam failures.

Policy SF-5.1. Ensure that the City's Emergency Plan is updated to include dam failure inundation as a potential emergency and procedures for the efficient and orderly notification and evacuation of potential dam inundation areas.

Policy SF-5.2. Request that the U.S. Army Corps of Engineers provide information relative to the potential dam inundation area associated with Castle Reservoir.

Storm Drainage

GOAL LU-24. Develop and implement Master Facility Plans for sewer, water and storm drainage.

Policy LU-24.1. Prepare and adopt comprehensive Master Facility Plans for water, sewer and storm drainage systems which address the City's proposed growth areas. The plans should focus on identifying specific future needs, and planning and financing projects designed to meet these needs.

Implementation Program LU-24.a. The City shall incorporate proposed projects from adopted Master Facility Plans into its Capital Improvement Program.

GOAL LU-25. Develop a comprehensive financing strategy for public infrastructure improvements.

Policy LU-25.1. Prepare a financing strategy to accompany the City's Capital Improvement Program. Funding strategies may include, but are not limited to, redevelopment financing, impact fees, assessment districts, and state and federal grant and loan programs.

Implementation Program LU-25.a. Require new development to pay its fair share of costs associated with providing public improvements and services.

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Storm drain parameters from the Nolte Report, which are still considered applicable, were used to estimate volumes and facility needs. These parameters include:

- Storage of a 50 year storm in the basin.
- VAR/12 formula for storage.
- $V = 50$ year rainfall = 2.74 inches/hour.
- Composite V factor:
Areas 1 and 2 = 0.7
Areas 3 and 4 = 0.6

Table 4.6-1 estimates the storm drainage volumes associated with the identified growth areas at build out.

**TABLE 4.6-1
ESTIMATED STORM DRAINAGE VOLUMES
ATWATER GROWTH AREAS**

Acres	Drainage Coefficient	Rain In./Hr.	VAR/12 Cubic Yd.	VAR/12 Ac. Ft.
Area 1A				
750.0	0.7	2.74	193,398	120.0
Area 1B				
550.0	0.7	2.74	141,825	88.0
Area 2				
520.0	0.7	2.74	143,373	89.0
Area 3				
371.0	0.6	2.74	305,017	189.0
Area 4				
152.0	0.6	2.74	118,470	73.0
Total for All Areas				
3,752.0	Varies	2.74	902,083	559.0

Source: GDR Engineering

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Based upon the volumes indicated in **Table 4.6-1**, the storm drain system expansion depicted in **Figure 4.6-8** was laid out with a series of 48-inch to 72-inch pipelines and retention basins and lift stations. The individual systems will require storage and a point of positive discharge. The point of discharge is not indicated, but the concept of storm drain lines and basins is shown. Typically basins will be emptied within 48 hours.

The City will need to prepare a Storm Drainage Master Plan to facilitate long range planning, and provide more definitive information regarding precise system improvements and refined cost estimates. From this information a system phasing and financing strategy can be developed.

In the interim, Atwater can continue to provide storm drainage for development. Each development will need to develop its own storm drainage system, the type and extent of which to be determined on a case-by-case basis. The systems will generally be retention basins or detention basins with a positive discharge. Atwater will be limited by the amount of discharge into the Atwater Drain and MID facilities. The CAADC site will be limited by the amount that can be discharged into Canal Creek.

Mitigation

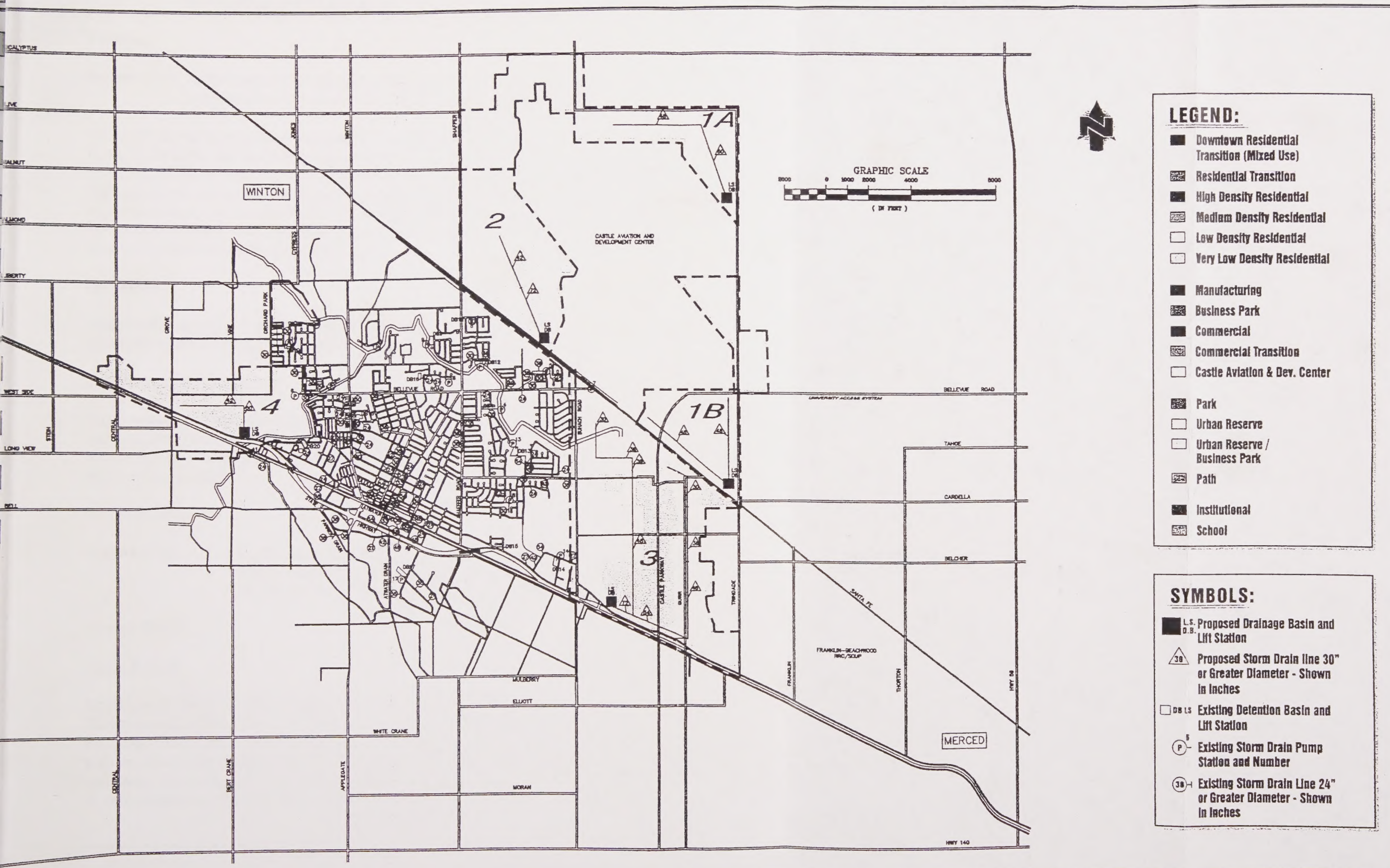
The following provisions of the proposed General Plan Update will substantially reduce **Impact 4.6-1: LU-24, LU-24.1, LU 24.a, LU-25, LU-25.1, and LU-25.a**. Additional mitigation is offered below:

MM 4.6-1a Until such time that the Master Storm Drainage Plan is developed, individual project applicants shall demonstrate that either storm drainage infrastructure is available to serve the project, or that the project includes adequate storm drainage.

Timing/Implementation: Prior to approval of individual development plans.

Enforcement/Monitoring: City of Atwater Public Works and Planning Departments.

Implementation of the above-listed provisions of the proposed General Plan Update and MM 4.6-1a will reduce **Impact 4.6-1** to **less than significant** by requiring that adequate storm drainage be considered prior to development project approval, and requiring that individual applicants contribute their fair share toward storm drain improvements.



LEGEND:

- Downtown Residential Transition (Mixed Use)
- Residential Transition
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Manufacturing
- Business Park
- Commercial
- Commercial Transition
- Castle Aviation & Dev. Center
- Park
- Urban Reserve
- Urban Reserve / Business Park
- Path
- Institutional
- School

SYMBOLS:

- L.S. Proposed Drainage Basin and Lift Station
- DB L.S. Existing Detention Basin and Lift Station
- 30 Proposed Storm Drain Line 30" or Greater Diameter - Shown in Inches
- 24 Existing Storm Drain Line 24" or Greater Diameter - Shown in Inches
- P Existing Storm Drain Pump Station and Number

FIGURE 4.6-8
STORM DRAIN PLAN

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Flooding

Impact 4.6-2 Implementation of the proposed General Plan Update may expose people and property to flood hazards. This is considered a **significant** impact.

As noted above, the southeastern corner of the study area (bounded approximately by Bellevue Road, to the north, and Buchach Road to the west) is within the 100-year floodplain as designated by FEMA. Furthermore, implementation of the General Plan would increase surface runoff, and MID canals may not have adequate capacity to transport storm water as the City develops. In addition to a loss of electricity, dam failures could cause flood hazards. Failure of the Lake Yosemite Dam, northeast of Merced, would inundate most of the City. Failure of the Castle reservoir could also inundate portions of the Planning Area.

Mitigation

Implementation of the following goals and policies of the proposed General Plan Update would substantially reduce **Impact 4.6-1: SF-4, SF-4.1, SF-4.a, SF-4.b and SF-4.c.**

Significance After Mitigation

Implementation of the above-listed provisions would reduce Impact 4.6-2 to less than significant by requiring structures to be built above the established 100-year elevation, eliminating hazardous land uses within the floodplain, and by ensuring adequate emergency response and evacuation in the event of dam inundation.

Water Quality

Impact 4.6-3 Implementation of the proposed General Plan Update could result in the degradation of surface and groundwater quality from a number of sources. This is a potentially **significant** impact.

Surface Water

Urban Runoff

Constituents found in urban runoff, which can degrade water quality, vary in concentration. Variances can be the result of the differences in rainfall intensity or geographic features of the site. Pollutants from automobiles (tire wear, gas, oil or fluid leaks) can accumulate during the dry season, then be released during early events in the wet season thereby resulting in higher concentrations of pollutants. This phenomenon, referred to as "first flush", also occurs with the build-up of fertilizers or other chemicals. This represents a **significant** impact.

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Erosion

Construction of the proposed project would include grading and other construction-related activities that would disturb the soil or leave areas without vegetation cover. Increased siltation and sedimentation could result from erosion and storm runoff during the construction phase. This is considered a **significant** impact.

Groundwater

Groundwater supplies the domestic water needs of the City. As noted above, groundwater contamination has already been identified as an issue. Nitrate problems associated with agricultural operations have been identified in the area, and contamination from pesticides has been identified in shallow wells. Contamination has also occurred as a result of past operations at the former Castle Air Force Base. Although these contaminants are not generally associated with uses proposed by the General Plan, the increase in impervious surface could affect recharge, which could in turn affect the concentration levels of the contaminants (issues of subsidence and water quantity are addressed in Sections 4.7 and 4.10, respectively). This is considered a **potentially significant** impact.

Mitigation

Implementation of the following provisions of the General Plan Update would substantially mitigate impacts to groundwater quality: **CO-1, CO-1.1, CO-1.2, CO1.a, CO-2, CO-2.1, CO-2.2, and CO-2.a**. The following mitigation is offered to reduce impacts to surface water quality:

MM4.6-3a

Prior to issuance of a grading permit, the project applicant shall submit to the Regional Water Quality Control Board and the Atwater Planning Department, for review and approval, an erosion control plan which indicates proper control of siltation, sedimentation, and other pollutants to be implemented per NPDES permit requirements. The plan shall address storm drainage during construction and proposed Best Management Practices (BMPs) to reduce erosion and water quality degradation. All on-site drainage facilities shall be constructed City standards. BMPs shall be implemented throughout the construction process. The following BMPs will be implemented as necessary:

- Soil Stabilization Practices (straw mulching, hydromulching, jute netting, revegetation, preservation of existing vegetation).
- Sediment Barriers (straw bale barriers, straw bale drop inlet barriers, filter fences).
- Site Construction Practices (winterization, traffic control, dust control).

4.6 SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

- Runoff Control in Slopes/Streets (diversion dikes, diversion swales, sediment trap).

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Regional Water Quality Control Board, City of Atwater Planning Department.

Significance After Mitigation

Implementation of the above-listed provisions of the proposed General Plan Update and **MM 4.6-3a** would reduce **Impact 4.5-3** to **less than significant** by ensuring that projects include features that will reduce impacts to ground and surface water quality.

This section discusses the geology of the project site and general vicinity, and analyzes issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based on literature prepared by the California Division of Mines and Geology, information from the U.S. Natural Resources Conservation Service, and mapping published by the U.S. Geologic Survey.

4.7.1 EXISTING SETTING

LOCAL GEOLOGY AND TOPOGRAPHY

The City of Atwater lies within the San Joaquin Valley, as does the entire Planning Area. The Valley is flat and contains few elevated features. Elevations within the City vary little, ranging from 145 feet to 170 feet above sea level. The official elevation of Atwater is 150 feet above sea level. Few natural watercourses traverse the Study Area - two of the most significant waterways are the Livingston and Atwater Canals, which are man-made channels. There are no significant topographical features within the Planning Area.

The San Joaquin Valley, within which the City lies, is bounded on the east by the Sierra Nevada, on the west by the Coast Range, and on the south by the Tehachapi Mountains. It is a geologic basin filled with sediments washed down from the Sierra Nevada. The City is situated on deep alluvial deposits laid down by the San Joaquin River, its tributaries and their ancient predecessors. These sediments vary in age from recent to several million years old, and their depth is up to several thousand feet. Depth to the granitic bedrock in the Merced area is in the range of 1,500 feet and decreases to the east toward the Sierra Nevada. According to the Geologic Map of California, San Jose Sheet, prepared by the California Division of Mines and Geology in 1966, almost all of Atwater is underlain by Quaternary dune sand. The one exception is most of the northern half of the CAADC site, where Pleistocene nonmarine sedimentary rock is found.

FAULTS AND SEISMICITY

No known faults are located in the Atwater Planning Area. **Figure 4.7-1** depicts the general location of geologic faults within and adjacent to Merced County. The nearest known fault is the Kings Canyon Lineament, approximately ten miles south of the City. Geological evidence indicates that this fault has not been historically active. The closest significant mapped faults lie about 20 miles to the northeast in the Sierra Nevada and 30 miles to the southwest in the Diablo Range. The Bear Mountain Fault, the fault in the Sierra Nevada, has not been active in historic times, but there is evidence of activity within the past 1.6 million years. Faults to the southwest include the San Joaquin and O'Neill Faults (both active within the last 700,000 years) and the Ortigalita Fault. Farther to the west are the Calaveras Fault and the San Andreas Fault, both historically active faults whose earthquakes have been felt in Merced County. The nearest Alquist-Priolo Special Studies Zone is the Ortigalita Fault Zone in southwestern Merced County, about 38 miles from the City.

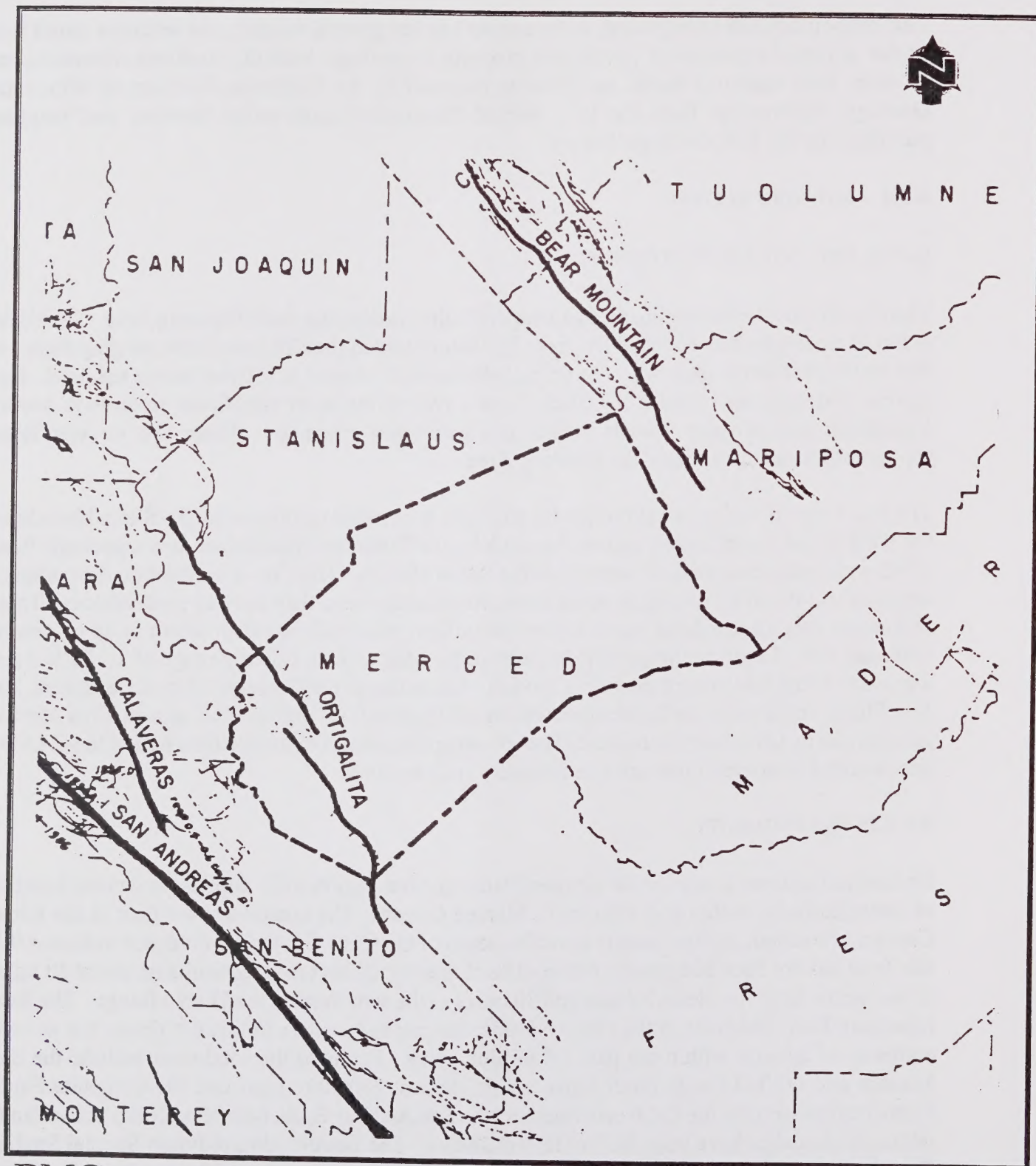


FIGURE 4.7-1
GEOLOGIC FAULTS IN AND ADJACENT TO MERCED COUNTY

While the Ortigalita Fault has not been active in historic times, it apparently has been active within the last 10,000 years.

Seismic risk is not limited to faults which have been currently identified. A significant percentage of small to moderately large earthquakes typically occur on faults not previously recognized. Such earthquakes are characterized as background seismicity or floating earthquakes, indicating that at the sources and location of such earthquakes are not known.

Earthquake magnitude is a measure of the total amount of energy released in an earthquake. With increasing magnitude, ground motions are stronger, last longer, and are felt over larger areas. Earthquake intensity is a measure of the effects of earthquake ground motions on people and buildings. Earthquake intensity is often more useful than magnitude when discussing the damaging effects of earthquakes. The most common intensity scale is the Modified Mercalli Intensity (MMI) scale, which ranges from I to XII. Table 4.7-1 describes the effects of earthquakes and compares the Richter Scale (magnitude) to the MMI scale (intensity).

SOILS

The Soil Survey of the Merced Area, conducted by the Soil Conservation Service (now the Natural Resources Conservation Service), indicates that soils in the Atwater area are of the Delhi-Atwater association. This association consists of well-drained, wind-modified, sandy soils. In scattered depressions, the water table is high. Delhi soils consist of sand and loamy sand. Atwater soils are similar, but they have a slight accumulation of clay in their subsoil.

Within the city limits, there are three major soil types. Most of the City sits upon Atwater sand, 0 to 3 percent slopes (AnA). This soil developed on gently undulating, wind-modified old alluvial fans and valley fill of the Merced River. The soil depth ranges from 3 to 14 feet. Natural drainage is good. Permeability is very rapid in the surface soil and moderate in the subsoil. The available water holding capacity is low, and runoff is very slow. There is little or no hazard of water erosion, but there is a severe hazard of wind erosion.

The southeastern corner of the City is underlain by Atwater loamy sand, 0 to 3 percent slopes (AfA). The water-holding capacity of this soil is moderate. The hazard of wind erosion is moderate. In the northeast portion of the City, the predominant soil is Atwater loamy sand, deep over hardpan, 0 to 3 percent (AgA). This soil is similar to the AfA soil, except that it is underlain by an iron-silica cemented hardpan at a depth of 3.5 to 5 feet. The parent material was granitic alluvium, and the soil was deposited by either wind or water over the older hardpan soil.

Scattered throughout the City are pockets of Atwater loamy sand, imperfectly drained variant, 0 to 3 percent slopes (AkA). This imperfectly drained soil occupies slight depressions that range from 5 to 30 acres in size and lie within areas of well-drained Atwater soils. Also present within the city

limits is Atwater loamy sand, deep over hardpan, poorly drained variant, 0 to 1 percent slopes (AdA). This soil rests on hardpan at a depth of 3.5 to 5 feet, and it has naturally poor drainage.

Soils similar to those described above are found throughout the Planning Area. Along Canal Creek, southeast of the CAADC site, lies Greenfield sandy loam, deep over hardpan, 0 to 3 percent slopes (GfA). This is a well-drained soil with moderate permeability and little or no hazard of erosion. The McSwain area and other portions of the Planning Area south of the City have Greenfield sandy loam, deep over hardpan, poorly drained variant, 0 to 1 percent slopes (GeA). GeA soils generally develop in depressions where irrigation water and rain water accumulate. Other soils scattered throughout the southern part of the Planning Area include:

Dinuba sandy loam, 0 to 1 percent slopes (DpA) - A moderately deep soil, with moderate permeability through the upper soil layers, but slow in the substratum. Imperfect drainage, slow surface runoff, and no erosion hazard.

Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent (DrA) - Similar to the Dinuba sandy loam, except that the surface soil is slightly calcareous in spots and has brown or brownish-black organic stains due to the effects of alkaline salts.

Dinuba sandy loam, poorly drained variant, moderately saline-alkali, 0 to 1 percent slopes (DtA) - Similar to Dinuba sandy loam, except that the water table is closer to the surface, making the soil moist for most of the year. Salt crusts are found in numerous locations.

Hilmar loamy sand, slightly saline-alkali, 0 to 3 percent slopes (HhA) - This soil is moderately deep. Permeability is very rapid in the surface soil, but slow to very slow in the subsoil. Surface runoff is very slow. There is no hazard of water erosion but a moderate hazard of wind erosion. The soil is slightly saline-alkali, with the salts generally in the subsoil.

Snelling sandy loam, imperfectly drained variant, 0 to 1 percent slopes (SmA) - A well-drained soil, with rapid permeability in the surface soil and moderate permeability in the subsoil. Surface runoff is slow. There is little erosion hazard except for a slight danger of wind movement. The soil in the Planning Area is affected slightly by a high water table, resulting from irrigation and impeded drainage. In places, sand has been added to the surface by wind.

MINERAL RESOURCES

Although no state-designated mineral resource areas currently exist in Merced County, the State Division of Mines and Geology is in the process of preparing a mineral land classification map for Merced County, per the State Mining and Reclamation Act of 1975. The Merced County General

Plan identified two active mining sites located southwest of Atwater near State Highway 140. The products mined at the site is not stated. In addition, a sand deposit is located in the vicinity of Atwater.

GEOLOGIC HAZARDS

Groundshaking

The most likely seismic hazard to be experienced by the City is ground shaking, caused by earthquakes generated on active faults in either the Sierra Nevada or the Coast Ranges. The Merced County General Plan states that documentary evidence exists for five earthquakes that shook the County. They occurred in 1872, 1906, 1952, 1966 and 1984. The Castle Reuse Plan EIS and the California Division of Mines and Geology indicate that Atwater is within Seismic Zone 3, as defined by the Uniform Building Code. Seismic Zone 3 is identified as likely to sustain damage due to major seismic events, and design inputs for construction of new facilities are required to minimize damage.

Liquefaction

There is a possibility of a liquefaction hazard in the Planning Area. Liquefaction, the complete loss of supportive strength of water-saturated sediment when it is subjected to ground shaking, is known to occur most often in uniform sandy sediments with water tables within 50 feet. However, studies to ascertain the potential liquefaction hazard have not been conducted.

Other Seismic Hazards

Other hazards, such as lateral spreading, surface cracking or differential settling, are considered unlikely to occur, although no studies have been conducted to determine the likelihood of these hazards.

Subsidence

Subsidence, the gradual settling or sinking of the earth's surface, has been a problem in Merced County, mainly in the southwestern portion. The cause of this subsidence has been the withdrawal of ground water at a rate faster than the recharge of the aquifer, a situation called overdraft. When subsidence occurs, the soils above the water table are compacted, and the surface ground level lowers. In some parts of California, subsidence of more than ten feet has occurred.

Wind Erosion

A hazard not generally well known, but which has occurred in the San Joaquin Valley, is the erosion of soils due to wind. The removal of soil by wind causes several problems. Not only does it have

the effect of denuding the land like water erosion, it also increases particulate matter pollution and reduces visibility. This can create hazards on the highways in the area. For example, a dust storm in the area between Selma and Fowler on May 19, 1997 led to a multiple vehicle collision involving 27 cars and three trucks. Fifteen people suffered injuries in the accident. However, the San Joaquin Valley itself is not the only source for dust. On September 14, 1997, a dust storm blanketed San Joaquin and Stanislaus counties, reducing visibilities from 30 miles to one mile at the Modesto Airport. The dust was so severe that people were warned to take children inside. The source of this storm was the Delta area, where northerly winds generated by the passage of a cold front stirred up dust.

Activities by humans, such as the plowing of land, can increase the likelihood of a wind erosion hazard. As depicted in Figure 4.6-2, the U.S. Soil Conservation Service (now known as the Natural Resource Conservation Service) has designated a majority of the Atwater General Plan Study Area as an area of severe wind erosion hazard. As previously mentioned, most of the City is located on Atwater sandy soil. This soil has been rated as having a severe hazard of wind erosion. Urban development and agricultural activities in the area could increase the hazard if proper mitigation measures are not implemented.

4.7.2 REGULATORY FRAMEWORK

RELATED GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

Seismic Hazards

GOAL SF-1. Minimize the threat of personal injury and property damage due to seismic activity.

Policy SF-1.1. Require all new development and rehabilitation of existing development to be in compliance with all Seismic Zone 3 requirements of the Uniform Building Code.

GOAL SF-2. Reduce the potential for property damage and injury resulting from liquefaction.

Policy SF-2.1. Require a geotechnical study for all projects located in areas that are subject to high groundwater tables, as noted in Figure 5-2, to assess the probability of liquefaction occurrence on project site. The geotechnical study shall identify any required design or construction mitigation to reduce potential impacts.

Subsidence

GOAL SF-3. Prohibit activities which could result in ground subsidence.

Policy SF-3.1. Require all project applications that propose extraction of groundwater to include a report evaluating the potential for subsidence. The report shall discuss appropriate mitigation measures to reduce the potential for subsidence.

Implementation Program SF-3.a. The City shall annually monitor the elevation of groundwater at City wells, and fluctuations in groundwater levels shall be recorded to determine long-term trends in groundwater elevations.

Wind Erosion

GOAL SF-7. Prevent activities that contribute to increased wind erosion.

Policy SF-7.1. Require all projects that involve grading or other earth moving activities to implement dust control measures to reduce dust emissions.

Policy SF-7.2. Cooperate with other appropriate law enforcement and emergency service agencies in planning for and implementing measures that reduce potential hazards caused by significant dust storms.

Implementation Program SF-7.a. The City planning staff, in cooperation with the Public Works and Building Departments, shall prepare a standard set of conditions for the control of dust emissions during grading and other earth moving activities. These standards shall not preclude the placement of other dust control conditions that may be deemed necessary. No standard conditions shall be removed unless the project applicant demonstrates that the condition will not be necessary to attain dust control objectives.

4.7.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

For the purposes of this EIR, impacts are considered significant if the following could result from implementation of the project:

- 1) Destruction or modification of unique geologic features;
- 2) Exposure of people or property to geologic hazards including:
 - Groundshaking and ground rupture
 - Liquifaction;
 - Subsidence;
 - Unstable soils; or,
- 3) Increased soil erosion.

METHODOLOGY

This analysis of potential geologic impacts are based on existing geologic information as presented above and the proposed safety element of the Atwater General Plan Update.

PROJECT IMPACTS

Seismic Hazards

Impact 4.7-1 Implementation of the proposed General Plan revision may expose people to hazards associated with seismic events. This is considered a **significant** impact.

Groundshaking

As noted above, the Planning Area is located in seismic Zone 3, as defined by the UBC. Seismic Zone 3 is identified as likely to sustain damage due to major seismic events. All new facilities would therefore be required to incorporate features to minimize damage. Compliance with building codes would reduce potential damage to **less than significant** if a major seismic event were to occur.

Liquefaction

As noted above, the soil conditions and groundwater levels present a setting that may be subject to liquefaction during seismic events. In addition, studies have not been conducted to determine the extent of this risk. Therefore, this impact is potentially **significant**.

Mitigation

Implementation of the following provisions of the proposed General Plan revision would substantially mitigate Impact 4.7-1 as it pertains to liquefaction: SF-1, SF-1.1, SF-2, SF-2.1, and SF-3.a.

Implementation of the provisions listed above would reduce **Impact 4.7-1** to **less than significant**. No further mitigation is required.

Geologic Hazards

Expansive Soils

As noted above, soils in the Atwater area do not have expansive qualities. Therefore, this impact is **less than significant**.

Subsidence

Impact 4.7-2 Implementation of the proposed General Plan revision may expose people to geologic hazards associated with subsidence. This is considered a **significant** impact.

Since the City is located atop a groundwater basin, it is potentially subject to subsidence, if groundwater withdrawal should exceed its replacement.

Mitigation

Implementation of the following provisions of the proposed General Plan revision would substantially mitigate **Impact 4.7-2: SF-3, SF-3.1, and SF-3.a.**

Implementation of the provisions listed above would reduce Impact 4.7-1 to **less than significant**. No further mitigation is required.

Soil Erosion

Impact 4.7-3 Construction activities associated implementation of the General Plan Update will expose soils to erosion from wind and water. This is considered a **significant** impact.

Mitigation

Wind erosion is addressed in Section 4.5 of this report, while water erosion is addressed in Section 4.6. Specific to soil erosion, implementation of the following provisions of the General Plan Update would substantially mitigate **Impact 4.7-3: SF-1, SF-1.1, SF-2, SF-2.1, and SF-3.a.**

Implementation of **MM 4.5-1a, 4.5-2a, and MM 4.6-3a**, and the General Plan provisions listed above would reduce **Impact 4.7-3** to **less than significant**. No further mitigation is required.

SECTION 4.8
BIOLOGICAL AND NATURAL RESOURCES

The results of the 2008 survey are shown in Table 8.0.1. The results show that the majority of respondents (75%) reported that the project had a positive impact on the local economy. The majority of respondents (75%) reported that the project had a positive impact on the local environment. The majority of respondents (75%) reported that the project had a positive impact on the local community.

8.0.1 Summary of Results

8.0.1.1 Economic Impact

The results of the 2008 survey show that the majority of respondents (75%) reported that the project had a positive impact on the local economy. The majority of respondents (75%) reported that the project had a positive impact on the local environment. The majority of respondents (75%) reported that the project had a positive impact on the local community.

The results of the 2008 survey show that the majority of respondents (75%) reported that the project had a positive impact on the local economy. The majority of respondents (75%) reported that the project had a positive impact on the local environment. The majority of respondents (75%) reported that the project had a positive impact on the local community.

8.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

The results of the 2008 survey show that the majority of respondents (75%) reported that the project had a positive impact on the local economy. The majority of respondents (75%) reported that the project had a positive impact on the local environment. The majority of respondents (75%) reported that the project had a positive impact on the local community.

8.0.1.2 Environmental Impact

The results of the 2008 survey show that the majority of respondents (75%) reported that the project had a positive impact on the local economy. The majority of respondents (75%) reported that the project had a positive impact on the local environment. The majority of respondents (75%) reported that the project had a positive impact on the local community.

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4.8 BIOLOGY AND NATURAL RESOURCES

This section of the EIR discusses the potential impacts to plants, wildlife and habitat occurring within the study area that occur as a result of project implementation. This section inventories known and potential species of concern, and recommends measures to mitigate potential biological impacts. The information in this section was obtained from a field survey and research of literature and databases conducted by May Consulting Services.

4.8.1 EXISTING SETTING

PROJECT AREA VEGETATION

The Planning Area is within the central eastern portion of the San Joaquin Valley. Prior to settlement in the mid-19th century, the area consisted of grassland with scattered oaks. Scattered vernal pools were also present on the higher terraces adjacent to the foothills of the Sierra Nevada mountain range.

The majority of natural vegetation in the area has since been removed for urban and agricultural land uses, and the only large area of natural vegetation remaining is at the former Castle Air Force Base site. Natural habitat types present in the area include annual grassland, riparian scrub, vernal pools and swales, seasonal wetland, and emergent marsh. Non-natural habitat types present include urban/landscaped areas, agricultural lands (cropland, orchard, irrigated pasture), and oldfield. Each of these habitats are described below and depicted in **Figure 4.8-1**

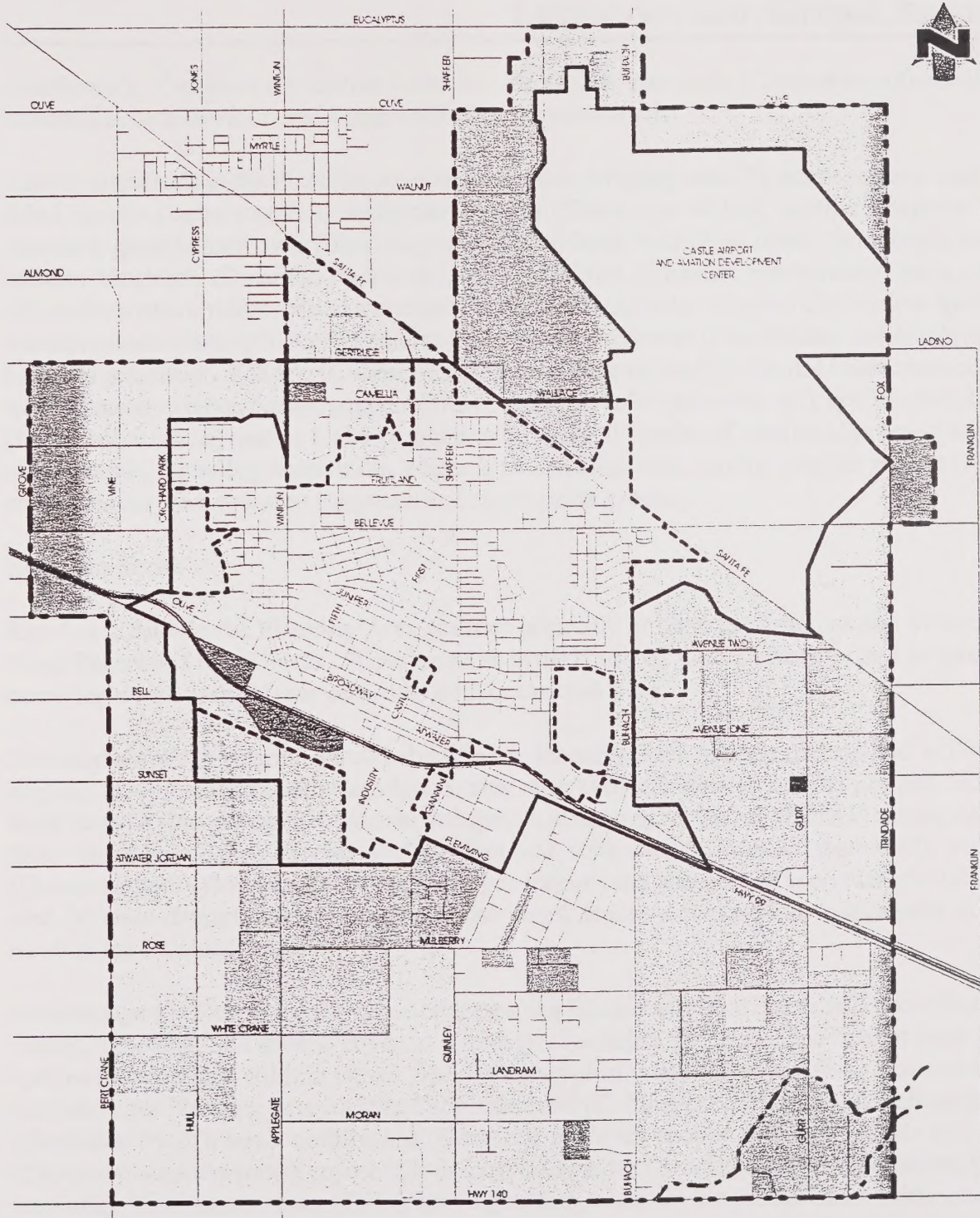
BIOLOGICAL COMMUNITIES

The following plant communities are present within the Planning Area. Also discussed below are general vegetation conditions, as well as plant and wildlife observed, known to occur or expected to occur.

Annual Grassland

Annual grassland is limited to the area immediately northeast of the runways at the CAADC site. Annual grassland at Castle has undergone many years of significant disturbances (e.g. grading and training) as a result of military activities. Annual grassland elsewhere in the Study Area has been converted to urban or agricultural land uses.

The species composition of annual grassland in the Study Area is typical of annual grassland elsewhere on the eastern side of the San Joaquin Valley. Non-native annual grasses dominate this habitat, including soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). Common native forbs include vinegar weed (*Trichostema lanceolatum*), dove weed (*Eremocarpus setigerus*), virgate tarweed (*Holocarpha virgata*), bicolor lupine (*Lupinus bicolor*), and Pursh's lotus (*Lotus*



LEGEND:

- Project Study Limits
- Atwater City Limits
- Sphere of Influence
- Castle Airport & Aviation Dev. Center

Upland Habitats:

- Orchard
- Cropland
- Annual Grassland
- Irrigated Pasture
- Oldfield

- Urban/Landscape (i.e., developed)

Wetland Habitats:

- Emergent Marsh
- Riparian Scrub

- Vernal Pool & Swale Concentration

(may contain some emergent marsh and/or seasonal wetlands habitats)

4.8 BIOLOGY AND NATURAL RESOURCES

purshianus). Common non-native forbs include yellow starthistle (*Centaurea solstitialis*), wild lettuce (*Lactuca serriola*) and horseweed (*Conyza canadensis*).

Annual grasslands in the Planning Area are important foraging areas for many raptors, such as red-tailed hawks (*Buteo regalis*), American kestrels (*Falco sparverius*), northern harriers (*Circus cyaneus*), great horned owls (*Bubo virginianus*) and barn owls (*Tyto alba*). Songbirds, including western kingbirds (*Tyrannus verticalis*), cliff swallows (*Hirundo pyrrhonota*), barn swallows (*Hirundo rustica*), yellow-billed magpies (*Pica nuttalli*), American crows (*Corvus brachyrhynchos*), western meadowlarks (*Sturnella neglecta*), and savanna sparrows (*Passerculus sandwichensis*) also forage in grasslands. Killdeer (*Charadrius vociferus*), ring-necked pheasants (*Phasianus colchicus*), western meadowlarks, pocket gophers (*Thomomys* sp.), voles (*Microtus* sp.), and black-tailed hares (*Lepus californicus*) nest or breed in grasslands. Several species of reptiles also breed and forage in grasslands, including western fence lizards (*Sceloporus occidentalis*), gopher snakes (*Pituophis melanoleucus*) and common kingsnakes (*Lampropeltis getulus*).

Riparian Scrub

Riparian habitat in the Planning Area consists primarily of open to dense patches of scrub along Black Rascal and Bear Creeks. Riparian scrub in the Planning Area is characterized as sporadically occurring dense assemblages of shrubs with occasional trees.

Common shrubs in riparian scrub habitat in the Planning Area include narrow-leaf willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus mexicana*), and Himalayan blackberry (*Rubus discolor*). Common tree species in riparian habitat within the Planning Area along Bear and Black Rascal Creeks include Fremont cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), Goodding's willow (*Salix gooddingii*) and blue gum (*Eucalyptus globulus*). Giant reed (*Arundo donax*), an invasive non-native weed, is also a conspicuous component of riparian scrub in the Planning Area.

Because riparian scrub occurs in dense clumps along Black Rascal and Bear Creeks, it offers nesting, resting, breeding, and escape cover to a variety of wildlife species. This habitat type has high species diversity and wildlife value. Species that typically take cover and forage in riparian scrub habitats in the Planning Area include California quail (*Callipepla californica*), American goldfinch (*Carduelis tristis*), lesser goldfinches (*Carduelis psaltria*), spotted towhees, (*Pipilo* sp.) gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), common kingsnake and Pacific chorus frog (*Pseudoacris regilla*).

Vernal Pool and Swale

Vernal pools are landscape depressions that pond shallow water seasonally. The pools support a distinctive biota adapted to periodic or continuous inundation during the winter-spring season and to the absence of ponded water or saturated soil during the summer-fall season. In contrast, swales are broad, shallow, seasonally wet areas that convey water primarily during and shortly after rain events and do not actually pond water like vernal pools. Surface runoff collects in swales, wetting and saturating the soil for short periods. Some swales connect vernal pools, filling or draining them. Others meander through vernal pool terrains but do not physically connect with individual vernal pools. In the Planning Area, vernal pools and swales are limited to an area east of the runways at the CAADC site. In addition to the natural vernal pools and swales, approximately 2.8 acres of vernal pools have been constructed as mitigation for impacts to vernal pools at the Federal Bureau of Prisons site.

Vernal pools in the Planning Area support a flora typical of San Joaquin Valley vernal pools. Vernal pool basins are dominated by coyote thistle (*Eryngium yaseyi*), Fremont's goldfields (*Lasthenia fremontii*), small stipitate popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*), bractless hedge hyssop (*Gratiola ebracteata*), woolly marbles (*Psilocarphus brevissimus*), cleistogamus spike-primrose (*Epilobium cleistogamum*) and common spike rush (*Eleocharis macrostachya*). Subdominant species interspersed among the dominant species listed above include hyssop loosertrife (*Lythrum hyssopifolia*), Sacramento mesa mint (*Pogogyne zizyphoroides*) and hairgrass (*Deschampsia danthanoides*).

Several rare, threatened, or endangered plant species are also found infrequently in vernal pools in the region. These rare plant species include, but are not limited to, San Joaquin Valley orcutt grass (*Orcuttia inaequalis*), Myer's navarettia (*Navarettia myersii* ssp. *myersii*), Colusa grass (*Neostapfia colusana*), Greene's tuctoria (*Tuctoria greenii*), succulent owl's clover (*Castilleja campestris* ssp. *succulenta*), Colusa grass, hairy orcutt grass (*Orcuttia pilosa*) and Hoover's spurge (*Chamaesyce hooveri*). Succulent owl's clover and Colusa grass are known to occur at Castle Airport (Preston pers.comm.). These two plant species are discussed in more detail later in this chapter.

Swales are dominated by many of the same species as vernal pools with the addition of Italian ryegrass (*Lolium multiflorum*) and Mediterranean barley (*Hordeum murinum* ssp. *gussoneanum*). Common seasonal wetland plant species include curly dock (*Rumex crispus*), ammania (*Ammania coccinea*), cocklebur (*Xanthium strumarium*), Bermuda grass (*Cynodon dactylon*), dallis grass (*Paspalum dilitatum*) and nutsedge (*Cyperus* spp.).

Vernal pools and swales have high wildlife value and wildlife species diversity. Vernal pools and swales in the Planning Area, especially within the CAADC site, are probably used by many water birds and other wildlife during the wet season. Shorebirds, waterfowl, and wading birds frequent vernal pools and swales during the winter and early spring. Water birds, such as mallards (*Anas*

4.8 BIOLOGY AND NATURAL RESOURCES

platyrhynchos), great egrets (*Casmerodius albus*), killdeer, American avocets (*Recurvirostra americana*), greater yellow-legs (*Tringa melanoleuca*), black-necked stilts (*Himantopus mexicanus*), feed or roost in the shallow pools. Cliff and barn swallows feed on insects around these pools. The pools also provide drinking and bathing water into the spring months, when water in the area may be limited. Vernal pools and swales are suitable habitat for a number of federally listed invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp. Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally listed threatened species, is known to occur in vernal pools at the Castle Airport (Department of the Air Force 1994).

Seasonal Wetland

Seasonal wetlands are shallow to deep depressions underlain by soils with slow permeability that promote ponding or soil saturation of varying durations during the wet season. Seasonal wetlands are differentiated from vernal pools and vernal swales by plant species composition. In the Planning Area, seasonal wetlands occur predominantly within the annual grassland matrix at Castle Airport. In addition to the natural seasonal wetlands at Castle Airport there is also a project being undertaken by the Federal Bureau of Prisons that will result in the creation of 1.2 acres of seasonal wetlands as mitigation for impacts to seasonal wetlands at the site. Seasonal wetlands have similar wildlife values as vernal pools.

Emergent Marsh

Emergent marsh is present in some slow moving waterways and fringe areas of permanent water such as stock ponds, creeks, and irrigation canals. Common plant species in emergent marsh within the Planning Area include broad-leaved cattail (*Typha latifolia*), common tule (*Scirpus acutus* var. *occidentalis*), burhead (*Echinodorus berteroii*), ditch-grass (*Paspalum distichum*) and arrowhead (*Sagittaria* spp.). Emergent marsh generally exists as a dense thicket when dominated by common tule or broad-leaved cattail or as a more sparsely vegetated habitat when dominated by burhead or arrowhead.

Although emergent marsh vegetation along Black Rascal Creek, Bear Creek, and irrigation canals is limited in distribution and extent, they have high wildlife value. Emergent marsh vegetation provides habitat for a variety of wildlife species, including pied-billed grebes (*Podilymbus podiceps*), American bitterns (*Botaurus lentiginosus*), mallards, American coots (*Fulica americana*), muskrats (*Ondatra zibethicus*) and beavers (*Castor canadensis*). One beaver dam was observed within Black Rascal Creek at its intersection with Franklin Road. Reptiles, such as common garter snakes, and amphibians, including Pacific treefrogs, bullfrogs (*Rana catesbeiana*), and western toads (*Bufo boreas*), also breed and forage in marshes.

Urban/Landscaped

Urban and landscaped areas are generally concentrated in the Atwater core area and consist of residences, businesses, parking lots, and schools. Vegetation in urban and landscaped areas is comprised of an array of non-native horticultural species, selected for their aesthetic appeal and ease of propagation. Common landscaping plants include blue gum, mulberry (*Morus* spp.), Italian cypress (*Cupressus* sp.), elms (*Ulmus* spp.), firethorn (*Pyracantha* spp.), oleander (*Nerium oleander*) and junipers (*Juniperus* spp.).

Urban and landscaped areas in the Planning Area have low wildlife value and low wildlife species diversity, although some common wildlife species use this habitat type. Species of birds adapted to urban areas include morning doves (*Zenaida macroura*), rock doves (*Columba livia*), American crows, yellow-billed magpies, scrub jays (*Aphelocoma coerulescens*), American robins (*Turdus migratorius*), northern mockingbirds (*Mimus polyglottos*), house finches (*Carpodacus mexicanus*) and house sparrows (*Passer domesticus*). Mammals such as raccoons, striped skunk and Virginia opossum also frequent these areas.

Agricultural Lands

Three general types of agricultural land are found within the Planning Area. Cropland consists of areas that are intensively cultivated on an annual or biennial basis for field or truck crops such as corn, watermelon, alfalfa, or other vegetables and grains. Orchards are one of the most extensive habitat types in the area. Almonds (*Prunus amygdalus*) are the most common orchard tree. However, English walnut (*Juglans regia*), fig (*Ficus carica*), and assorted stone fruits (*Prunus* spp.) also exist. Irrigated pasture is limited in the area and is most common south of Highway 99. Irrigated pasture occurs in areas that were formerly annual grassland but are now leveled and irrigated to provide year-round forage for livestock. Common irrigated pasture species include dallis grass, tall fescue (*Festuca arundinacea*), bird's-foot trefoil (*Lotus corniculatus*), and nutsedge.

The croplands in the Planning Area have moderate to high wildlife value. Alfalfa has high value for wildlife, especially raptors (e.g., Swainson's hawks [*Buteo swainsoni*], red-tailed hawks, and northern harriers), wading birds (e.g., great egrets), rodents (e.g., voles and pocket gophers), and songbirds (e.g., Brewer's blackbirds [*Euphagus cyanocephalus*], red-winged blackbirds [*Agelaius phoeniceus*], brown-headed cowbirds [*Molothrus ater*], and western meadowlarks). Coyotes, common kingsnakes and striped skunks are other common wildlife species that may forage in alfalfa fields and other agricultural crops.

Orchards have low wildlife species diversity and low value for most wildlife species because of the lack of ground cover, low plant species diversity, use of pesticides, and human disturbances such as spraying, pruning, and harvesting. Orchards provide nesting habitat for several species of birds, including red-tailed hawks, great horned owls, American crows, morning doves, and American

robins. Many common species of birds and mammals feed on almond and walnut nuts, including northern flickers, yellow-billed magpies, American crows, scrub jays, and California ground squirrels. Other fruit trees, such as peaches, provide fruit for robins, house finches, crows, magpies, and European starlings (*Sturnus vulgaris*).

Irrigated pasture has low wildlife value and low wildlife species diversity. Yet, many common wildlife species are often found in irrigated pastures. These include coyotes, ground squirrels, pocket gophers, western meadowlarks, killdeer, red-winged blackbirds, Brewer's blackbirds, cowbirds, common gopher snakes and kingsnakes.

Oldfields

Oldfields are areas that were formerly used for agricultural production but have since been abandoned. This distinguishes them from both agricultural lands and natural habitats.

Oldfield vegetation is characterized by a predominance of native and non-native weedy herbaceous species. Examples are bindweed (*Convolvulus arvensis*), Johnson grass (*Sorghum halepense*), yellow starthistle, horseweed, Bermuda grass, telegraph weed (*Heterotheca grandiflora*), and Pursh's lotus (*Lotus purshianus*).

Although oldfields have relatively low wildlife value and low wildlife species diversity, they are used by many common animals. Examples are coyotes, California voles, California ground squirrels, pocket gophers, morning doves, rock doves, western meadowlarks, red-winged blackbirds, Brewer's blackbirds, cowbirds, western fence lizards, common gopher snakes and kingsnakes. Red-tailed hawks and northern harriers hunt for small mammals and reptiles in this habitat.

SENSITIVE HABITATS

Sensitive habitats are natural habitats that have high biological value and/or documented scarcity in the region or state. Examples of sensitive habitats occurring in the Planning Area include wetlands (vernal pools and swales, seasonal wetlands, and emergent marsh), riparian vegetation (i.e., riparian scrub), and aquatic resources (e.g., Bear, Black Rascal, and Canal Creeks).

Sensitive habitats in the Planning Area include vernal pools and swales, seasonal wetlands, emergent marsh, and riparian scrub. These habitat types have all undergone significant losses statewide since the middle of the 19th century. Many of the areas in which these habitat types existed were converted to agricultural lands early in the 20th century. Because these habitats have become scarce, many of their dependent plant and wildlife species have become rare or endangered. All of the sensitive habitats in the Planning Area have some potential to support special status plant or wildlife species. Additionally, these habitats or portions thereof would qualify as wetlands, as defined under Section 404 of the Clean Water Act (CWA), and would therefore be under jurisdiction of the U.S.

4.8 BIOLOGY AND NATURAL RESOURCES

Army Corps of Engineers (Corps). (See 4.8.2 Regulatory Framework).

SPECIAL STATUS SPECIES

For the purposes of this report, special status species are defined as follows:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (62 FR 182: 49397-49411, September 19, 1997).
- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (State CEQA Guidelines, Section 15380).
- Plants listed as rare or endangered under the California Native Plant Protection Act (Cal. Fish and Game Code, Section 1900 et seq.).
- Plants considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered in California” (Lists 1B and 2 in Skinner and Pavlik 1994).
- Plants listed by the CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik 1994), which may be included as special-status species on the basis of local significance or recent biological information;
- Animal species of special concern to the California Department of Fish and Game (Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1984 [amphibians and reptiles]).
- Animals fully protected in California (Cal. Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Prior to conducting the reconnaissance-level survey, May Consulting Services biologists reviewed pertinent literature, consulted with knowledgeable individuals, conducted a records search of California Department of Fish and Game’s Natural Diversity Data Base (NDDB), and reviewed pertinent documents to obtain information on special status species that are known or could occur in the Planning Area. Special status plant and wildlife species identified during the pre-field survey investigation as having the potential to occur on the study site are included in **Tables 4.8-1** and **Table 4.8-2**, respectively.

4.8 BIOLOGY AND NATURAL RESOURCES

TABLE 4.8-1
SPECIAL STATUS PLANT SPECIES EXISTING, OR WITH POTENTIAL TO EXIST,
IN ATWATER PLANNING AREA

Common Name (Scientific Name)	Legal Status* Fed/State/CNPS	Distribution	Habitat Requirements	Identification Period	Occurrence in Planning Area
Henderson's bent grass (<i>Agrostis hendersonii</i>)	SC/-/3	Calaveras, Merced, Shasta and possibly Butte Counties; extirpated from Oregon	Mesic valley and foothill grassland, vernal pools	April-May	Not known to occur in Planning Area. Suitable habitat at Castle Airport.
Heartscale (<i>Atriplex cordulata</i>)	SC/-/1B	Western Central Valley and valleys of adjacent foothills	Alkali grassland, alkali meadow, alkali scrub, sandy substrates	May-October	Not known to occur in Planning Area. Very limited habitat in study area. Potential for occurrence is low.
Brittlescale (<i>Atriplex depressa</i>)	SC/-/1B	Western Central Valley and valleys of adjacent foothills	Alkali grassland, alkali meadow, alkali scrub	June-October	Not known to occur in Planning Area. Very limited habitat in study area. Potential for occurrence is low.
Persistent Fruited saltscale (<i>Atriplex persistens</i>) var. <i>persistens</i>)	SC/-/-	Central Valley from Glenn County south to Tulare County	Alkaline vernal pools, alkali scalds and playas	Late summer	Not known to occur in Planning Area. Suitable habitat not present in study area.
Succulent owl's clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>)	PT/E/1B	Fresno, Madera, Merced, Mariposa and Stanislaus Counties	Vernal pools	April-May	Present in vernal pools at Castle Airport.
Hoover's spurge (<i>Chamaesyce hooveri</i>)	PT/-/1B	Butte, Glenn, Stanislaus, Tehama, and Tulare Counties	Northern hardpan and volcanic vernal pools	July	Not known to occur in Planning Area. Marginal habitat at Castle Airport.
Dwarf downingia (<i>Downingia pusilla</i>)	SC/-/2	Sacramento and San Joaquin Valleys. Also known from limited locations in the North Coast Range	Vernal pools	March-May	Not known to occur in Planning Area. Habitat present at Castle Airport.
Spiny-sealed button-celery (<i>Eryngium spinosepalum</i>)	SC/-/1B	Fresno, Madera, Stanislaus, and Tulare Counties	Valley and foothill grassland, vernal pools	April-May	Not known to occur in Planning Area. Marginal habitat at Castle Airport.
Bogg's Lake hedge-hyssop (<i>Gratiola heterosepala</i>)	SC/E/1B	Central Valley and other scattered locations in northern California	Vernal pools, marshes along lake margins	April-June	Not known to occur in Planning Area. Marginal habitat at Castle Airport.
Ahart's dwarf rush (<i>Juncus leiostermus</i> var. <i>ahartii</i>)	C/-/1B	Butte, Calaveras, Placer, and Sacramento Counties	Vernal pools	March-May	Not known to occur in Planning Area. Marginal habitat at Castle Airport.
Legenere (<i>Legenere limosa</i>)	SC/-/1B	Southern Sacramento Valley, south North Coast Ranges	Vernal pools	May-June	Not known to occur in Planning Area. Marginal habitat at Castle Airport.
Merced monardella (<i>Monardella leucocephala</i>)	SC/-/1A	Presumed extinct, formerly known from Merced and Stanislaus Counties	Valley and foothill grassland on sandy substrates	July-August	Not known to occur in Planning Area. Suitable habitat in study area mostly converted to agriculture.

4.8 BIOLOGY AND NATURAL RESOURCES

Common Name (Scientific Name)	Legal Status* Fed/State/CNPS	Distribution	Habitat Requirements	Identification Period	Occurrence in Planning Area
Myer's navarettia (<i>Navarettia myersii</i> ssp. <i>myersii</i>)	SC/-1B	Sporadic occurrences in Sacramento and San Joaquin Valleys	Vernal pools	May	Not known to occur in Planning Area. Suitable habitat at Castle Airport.
Colusa grass (<i>Neostapfia colusana</i>)	PT/E/1B	Southern Sacramento Valley, Northern San Joaquin Valley	Vernal pools	May-July	Present in vernal pools at Castle Airport.
Hairy orcutt grass (<i>Orcuttia pilosa</i>)	PE/E/1B	Butte, Glenn, Madera, Merced, Stanislaus and Tehama Counties	Vernal pools	May-August	Not known to occur in Planning Area. Marginally suitable habitat at Castle Airport.
San Joaquin Valley orcutt grass (<i>Orcuttia inaequalis</i>)	PE/E/1B	Fresno, Madera, and Merced Counties, extirpated from Stanislaus and Tulare Counties	Vernal pools	May-September	Not known to occur in Planning Area. Marginally suitable habitat at Castle Airport.
Merced phacelia (<i>Phacelia ciliata</i> var. <i>opaca</i>)	SC/-1B	Merced County	Valley and foothill grassland on clay substrates below 500 feet	February-May	Not known to occur in Planning Area. Suitable habitat in Planning Area mostly converted to agriculture.
Sanford's sagittaria (<i>Sagittaria sanfordii</i>)	SC/-1B	Butte, Del Norte, Fresno, Kern, Merced, Marin, Sacramento, Shasta, San Joaquin, and Tehama Counties; extirpated from Orange and Ventura Counties	Freshwater marshes in shallow streams and ditches	May-August	Not known to occur in Planning Area. Suitable habitat present on Bear and Black Rascal Creeks and other agricultural ditches.
Greene's tuctoria (<i>Tuctoria greenei</i>)	PE/R/1B	Butte, Merced, Shasta, and Tehama Counties; extirpated from Fresno, Madera, San Joaquin, Stanislaus and Tulare Counties	Vernal pools	May-July	Not known to occur in Planning Area. Marginally suitable habitat at Castle Airport.

* Status Explanations, see next page.

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Federal

E: listed as endangered under the federal Endangered Species Act.

T: listed as threatened under the federal Endangered Species Act.

C: Category 1 candidate for federal listing. Species for which USFWS has on file enough substantial information on biological vulnerability and threat to support proposals to list them.

SC: species of concern; formerly Category 2 candidate for federal listing.

PE: proposed for listing as endangered.

PT: proposed for listing as threatened.

--: no listing status.

State

E: listed as endangered under the California Endangered Species Act.

R: listed as rare under the California Endangered Species Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.

T: listed as threatened under the California Endangered Species Act.

CP: fully protected under the California Fish and Game Code.

SSC: species of special concern.

--: no listing status.

California Native Plant Society

1B: List 1B species: rare, threatened or endangered in California and elsewhere.

2 : List 2 species: rare, threatened or endangered in California, more common elsewhere.

4 : List 4 species: plants of limited distribution, a watch list.

Source: May Consulting Service.

4.8 BIOLOGY AND NATURAL RESOURCES

TABLE 4.8-2
SPECIAL STATUS WILDLIFE SPECIES EXISTING OR WITH POTENTIAL TO EXIST
IN ATWATER PLANNING AREA

Common Name (Scientific Name)	Status * Federal/State	Distribution	Preferred Habitats in California	Reasons for Decline or Concern	Occurrence in Planning Area
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E/--	Known locations: Solano, Merced, Tehama, Butte, and Glenn Counties.	Large, deep vernal pools in annual grasslands	Habitat loss to agricultural and urban development	No records in Planning Area; potential habitat occurs in vernal pools, swales, or other seasonal wetlands in the Planning Area, such as the seasonal wetlands at the former Castle Air Force Base.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County and portions of Riverside County. Recently reported from the Medford area in Oregon.	Common in vernal pools; also found in sandstone rock outcrop pools	Habitat loss to agricultural and urban development	Reported in the drainage along the Santa Fe Railroad near Fox Road and at the former Castle Air Force Base; potential habitat occurs in vernal pools, swales, and other seasonal wetlands in the Planning Area, such as the seasonal wetlands at the former Castle Air Force Base.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E/--	Central Valley from Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	Habitat loss to agricultural and urban development	No records in the Planning Area; potential habitat occurs in vernal pools, swales, and other seasonal wetlands in the Planning Area, such as the seasonal wetlands at the former Castle Air Force Base.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T/--	Central Valley; below 3,000 feet in the Sierra Nevada; eastern side of Coast Ranges	Riparian and oak savanna habitats with elderberry shrubs; elderberries are host plant	Loss and fragmentation of riparian habitats	No records in the Planning Area; potential habitat (i.e., elderberry shrubs) occurs in isolated patches in the Planning Area; elderberry shrubs were observed along Palm Avenue at the edge of a agricultural field and Bear Creek.
Molestan blister beetle (<i>Lytta molesta</i>)	SC/--	San Joaquin Valley from Contra Costa County south to Tulare and Kern Counties	Vernal pools	Loss of and alteration to vernal pools	Recorded near the Planning Area; potential habitat occurs in vernal pools, swales, and other seasonal wetlands in the Planning Area, such as the seasonal wetlands at the former Castle Air Force Base

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Common Name (Scientific Name)	Status * Federal/State	Distribution	Preferred Habitats in California	Reasons for Decline or Concern	Occurrence in Planning Area
California tiger salamander (<i>Ambystoma californiense</i>)	C/SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Loss of grasslands, vernal pools, and other wetlands to agricultural development and urbanization	No records; it is unlikely that the tiger salamander occurs in the Planning Area, but potential habitat (i.e., seasonal wetlands or vernal pools) occurs at the former Castle Air Force Base.
Western spadefoot (<i>Scaphiopus hammondi</i>)	SC/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	Alteration of stream habitats by urbanization and hydroelectric projects, loss of seasonal wetlands and vernal pools	No records; it is unlikely that spadefoot toads occur in the Planning Area, but potential habitat (i.e., seasonal wetlands or vernal pools) occur at the former Castle Air Force Base.
California red-legged frog (<i>Rana aurora draytoni</i>)	T/SSC	Found along the coast and coastal mountain ranges of California from Humboldt County to San Diego County; Sierra Nevada (mid-elevations [above 1,000 feet] from Butte County to Fresno County)	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation and riparian species along the edges; may aestivate in rodent burrows or cracks during dry periods	Alteration of stream and wetland habitats, overharvesting (historically), habitat destruction, competition and predation by fish and bullfrogs	No records; it is unlikely that red-legged frogs occur in the Planning Area, but Bear and Black Rascal Creeks are considered potential habitat.
California horned lizard (<i>Phrynosoma coronatum frontale</i>)	SC/SSC	Sacramento and San Joaquin Valley's and adjacent foothills, south to southern California; Coast Ranges south of Sonoma County	Grasslands, brushlands, woodlands, and open coniferous forest with sandy or loose soil; requires abundant ant colonies for foraging	Habitat loss and fragmentation	No records; potential habitat occurs in grasslands and oldfields in the Planning Area, such as the former Castle Air Force Base.
Giant garter snake (<i>Thamnophis gigas</i>)	T/T	Central Valley from Fresno north to the Gridley/Sutter Buttes area; has been extirpated from areas south of Fresno	Sloughs, canals, and other small waterways where there is a prey base of small fish and amphibians; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	Loss and fragmentation of habitat from agricultural development and operations, urban development, flood control projects, introduction of predators	No records; Bear Creek and Black Rascal Creek banks and streams are considered low- to moderate-quality giant garter snake habitat; irrigation canals could also support this species.

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Common Name (Scientific Name)	Status * Federal/State	Distribution	Preferred Habitats in California	Reasons for Decline or Concern	Occurrence in Planning Area
Western pond turtles (<i>Clemmys marmorata</i> <i>ssp. marmorata</i> and <i>pallida</i>)	SC/SSC	Western Washington to Northern Baja mostly west of the Sierran Crest	Aquatic turtle: requires ponds, slow-moving waterways such as creeks and irrigation ditches where water ponds. Prefers habitats with basking sites, aquatic vegetation, and suitable upland habitats for egg-laying	Loss and fragmentation of habitat from agricultural development and operations, urban development, flood control projects, introduction of predators	No records; Bear Creek and Black Rascal Creek considered low- to moderate- quality habitat.
White-tailed kite (<i>Elanus leucurus</i>)	—/FP	Lowland areas west of Sierra Nevada from head of Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Loss of grassland and wetland habitats to agriculture and urban development	No records; old fields and grasslands are suitable foraging habitats; could nest along streams in the Planning Area or in orchards.
Northern harrier (<i>Circus cyaneus</i>)	—/SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	Loss of habitat to agricultural and urban development	No records; old fields and grasslands are suitable foraging habitats; could nest in undisturbed in old fields or grasslands.
Swainson's hawk (<i>Buteo swainsoni</i>)	—/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; the state's highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields	Loss of riparian, agriculture, and grassland habitats; vulnerable to human disturbance at nest sites	No records; Bear and Black Rascal Creeks are suitable nesting areas; could also nest in isolated eucalyptus stands or oak trees; old fields, grasslands, and agricultural fields (especially alfalfa) are suitable foraging habitats.
Western burrowing owl (<i>Athene cunicularia</i> <i>hypugea</i>)	SC/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Rodent burrows in sparse grasslands, large undisturbed urban vacant lots, deserts, and agricultural habitats	Loss of habitat, habitat fragmentation, human disturbance at nesting burrows	Observed at Castle Air Force Base in 1993; suitable habitat occurs at the former Castle Air Force Base and other areas where grasslands, oldfields, or agricultural fields occur.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	—/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north to Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Loss of habitat and pesticide use; still widespread in California	Observed at Castle Air Force Base; could occur where grasslands, oldfields, or agricultural fields occur.

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Common Name (Scientific Name)	Status * Federal/State	Distribution	Preferred Habitats in California	Reasons for Decline or Concern	Occurrence in Planning Area
Tricolored blackbird (<i>Agelaius tricolor</i>)	SC/SSC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant.	Loss of wetland and upland breeding habitats from conversion to agriculture and urban development and to water development projects, pesticides contamination, human disturbance of nesting colonies	Observed nesting in wetlands, northwest of the Castle Air Force Base runway in 1994; also observed nesting west of the Planning Area; Bear Creek and Black Rascal Creek are potential nesting areas; suitable foraging habitats in the Planning Area include grasslands and pastures.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	E/E	Found only in Fresno County	Found at elevations from 200 to 300 feet in alkali sink habitats	Habitat loss to agricultural development	No records; it is unlikely that this kangaroo rat occurs in the Planning Area, but potential habitat occurs in old fields and grasslands.
San Joaquin pocket mouse (<i>Perognathus inornatus</i>)	SC/—	Occurs along the eastern side of the San Joaquin Valley	Favors grasslands and oak savannas with friable soils	Habitat loss and fragmentation	No records; potential habitat occurs in grasslands and oldfields, such as the former Castle Air Force Base.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	Habitat loss to agricultural development; altered habitat from grazing, mining, and industrial development; predation by dogs and non-native red foxes	No records; it is unlikely that kit fox occur in the Study Area, but potential habitat occurs in old fields and grasslands.

* Status definitions:

Federal

E: listed as endangered under the federal Endangered Species Act.

T: listed as threatened under the federal Endangered Species Act.

C: Category 1 candidate for federal listing. Species for which USFWS

has on file enough substantial information on biological vulnerability

and Game Code.

and threat to support proposals to list them.

SC: species of concern; formerly Category 2 candidate for federal listing.

PE : proposed for listing as endangered.

PT : proposed for listing as threatened.

—: no listing status.

Source: May Consulting Services

State

E: listed as endangered under the California

T: listed as threatened under the California

R: listed as rare under the California

CP: fully protected under the California Fish

SSP: species of special concern.

—: no listing status.

Special Status Plant Species

Two special status plant species, Colusa grass and succulent owl's clover, are known to exist in the area (Figure 4.8-2). Each of these species and their occurrence in the Planning Area is briefly described below.

Colusa Grass

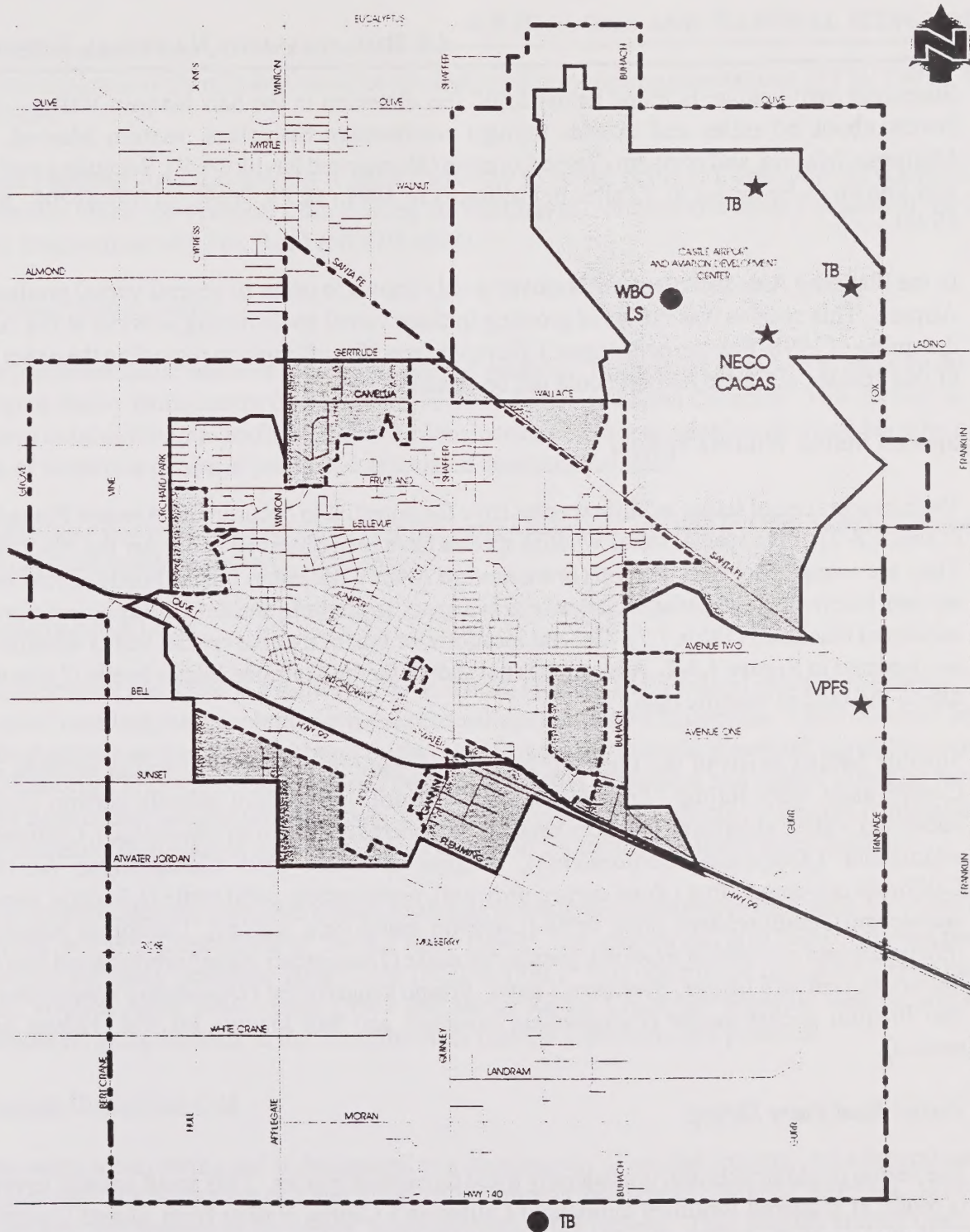
Colusa grass is federally listed as threatened, state listed as endangered, and is considered rare and endangered (List 1B) by the CNPS (Skinner and Pavlik 1994). Colusa grass is a 3- to 12-inch tall tufted annual grass. Typically it has several stems that are decumbent at the base. The upper stem is erect and terminates in a dense cylindrical inflorescence (flower head). The inflorescences have sheathing leaves, superficially resembling ears of corn and individual florets that are broadly fan-shaped. At maturity, Colusa grass, like the related orcutt grasses, is covered with a sticky brownish exudate. The flowering period for Colusa grass is generally from May through July. Colusa grass is usually found in fairly pure stands in the drying beds of larger vernal pools (Stone et al. 1988). When Colusa grass is present, other vernal pool plants are often sparse or absent. When found with other species, Colusa grass is often associated with Hoover's spurge or orcutt grasses (*Orcuttia* spp.) (Stone et al. 1988).

Currently, Colusa grass is known to occur in Merced, Solano, and Stanislaus Counties below 700 feet elevation. It has been extirpated from Colusa County where it was originally discovered (Skinner and Pavlik 1994). Based on its habitat requirements the species' historical range was probably not much larger than is its current range. However, populations of Colusa grass were much more abundant historically than they are currently. Colusa grass was reported to be extant at 41 sites in California in 1993 (58 FR [149]: 41700-41708, August 5, 1993). Most of these sites lie within Merced and Stanislaus Counties (Stone et al. 1988).

In the Atwater area, Colusa grass is known to exist only in vernal pools at Castle Airport. The species was observed in vernal pools at the airport during surveys in 1993 for the base closure, but was not relocated during surveys in 1994 (Department of the Air Force 1994).

Succulent Owl's Clover

Succulent owl's clover is federally listed as threatened, state listed as endangered, and is considered rare and endangered (List 1B) by CNPS (Skinner and Pavlik 1994). Succulent owl's clover is a 3- to 12-inch annual plant with fleshy stems and leaves. It is a member of the snapdragon family. The flowers are deep yellow to orange and are borne in a dense inflorescence that is subtended by brittle fleshy bracts. The flowering period for succulent owl's clover is generally from late April through May. Succulent owl's clover is found in vernal pools, swales, and related types of seasonal wetlands. It often occurs in acidic soils (Natural Diversity Data Base 1998).



LEGEND:

Special-Status Wildlife Species

- LS** Loggerhead Shrike (*Lanius ludovicianus*)
- TB** Tricolored Blackbird (*Agelaius tricolor*)
- VPFS** Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)
- WBO** Western Burrowing Owl (*Athene cunicularia hypugae*)

Special-Status Plant Species

- CACAS** *Castilleja campestris* SSP. *succulenta* (Succulent Owl Clover)
- NECO** *Neostaphia colusana* (Colusa Grass)
- Known Location Within 1/2 Mile Radius
- ★ Known Location Within 1 Mile Radius

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Succulent owl's clover is found below 2,500 feet elevation in the San Joaquin Valley. Its range covers about 66 miles and extends through southeastern Stanislaus, eastern Merced, western Mariposa, Madera, and northern Fresno Counties (Skinner and Pavlik 1994). Succulent owl's clover was known to be extant at 33 sites in California in 1993 (58 FR [149]: 41700-41708, August 5, 1993).

In the Planning Area succulent owl's clover is only known to occur in several vernal pools at Castle Airport. This species was observed growing in these vernal pools during surveys at the Airport in the spring of 1998 (Preston pers.comm.). However, specific information regarding the exact location of this species at Castle Airport could not be obtained.

Special Status Wildlife Species

Twenty-one special status wildlife species have the potential to occur in the Atwater Planning Area (Table 4.8-2). Five special status wildlife species have been observed in or near the Planning Area. They are vernal pool fairy shrimp (*Branchinecta lynchi*), Molestan blister beetle (*Lytta molesta*), western burrowing owl (*Athene cunicularia hypugea*), loggerhead shrike (*Lanius ludovicianus*), and tricolored blackbird (Table 7.7). General locations for four of the five special status wildlife species are depicted in **Figure 4.8-2**. A location is not shown for the Molestan blister beetle (*Lytta molesta*) due to the lack of specific data.

Suitable habitat exists in the Planning Area for an additional 16 special status wildlife species: Conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool tadpole shrimp (*Lepidurus packardii*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Schaphiopus hammondi*), California red-legged frog (*Rana aurora draytoni*), northwestern pond turtle (*Clemmys marmorata marmorata*), southwestern pond turtle (*Clemmys marmorata pallida*), California horned lizard (*Phrynosoma coronatum frontale*), giant garter snake (*Thamnophis gigas*), white-tailed kite (*Elanus leucurus*), northern harrier, Swainson's hawk, Fresno kangaroo rat (*Dipodomys nitratoides exilis*), San Joaquin pocket mouse (*Perognathus inoratus*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is a federally listed threatened species. This small aquatic invertebrate is found at scattered localities throughout California's Central Valley from Shasta County in the north throughout most of the length of the Central Valley and the eastern margin of the Central Coast Range (Eng. et al. 1990, and Sugnet & Associates 1993). Recently, this species has been recorded in the Medford area in Oregon (May Consulting Services file information). Vernal pool fairy shrimp occur in seasonally inundated wetlands, primarily in vernal pools. However, this species has also been observed in roadside ditches, railroad right of ways, road ruts, and backhoe pits (Helm 1998). Loss of vernal pool habitat to urban development, water supply and flood control activities, and

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agricultural uses is the primary cause for the decline of fairy shrimp populations (57 FR 19856, May 8, 1992).

In the Planning Area this species is known to occur in vernal pools at Castle Airport (Department of the Air Force 1994) and in a ditch along the Burlington Northern and Santa Fe railroad tracks at their intersection with Fox Road (NDDB 1998).

Molestan Blister Beetle

The molestan blister beetle is a federal species of concern. The species is known to occur in the San Joaquin Valley from Contra Costa County south to Tulare and Kern Counties. This species is only known to inhabit vernal pools and other seasonal wetlands. This species has declined because of the loss or alteration of vernal pools and associated grassland habitats.

This species was reported from a site “6 miles north of Merced” in 1960 (NDDB 1998). The species has not been recently observed in the region.

Tricolored Blackbird

The tricolored blackbird is a state species of special concern and a federal species of concern. This species’ breeding range includes lowlands and valleys throughout California. This blackbird breeds in freshwater marshes and blackberry thickets and forages in wetlands, grassland, agricultural fields, and pastures. This species has declined because of the loss of wetland and upland breeding habitats from conversion to agricultural, urban, and water development projects. Pesticide contamination and human disturbance of nesting colonies have also contributed to the species decline.

Tricolored blackbirds have been observed nesting in wetlands northwest of the Castle Air Force Base runway in 1994 (Department of the Air force 1994). The species has also been observed nesting south of the Study Area near Bear Creek (NDDB 1998). This occurrence near Bear Creek has not been verified since 1986. Bear Creek and Black Rascal Creek are potential nesting areas and suitable foraging habitats in the Planning Area include grasslands and pastures.

Western Burrowing Owl

The western burrowing owl is designated as a state species of special concern and a federal species of concern. The burrowing owl was historically common throughout lowland California. However, a decline, first noticed in the 1940s, has continued to the present. This species prefers open, dry, nearly level grasslands, old fields, large urban lots, and agricultural fields. They nest and roost in burrows created by California ground squirrels.

4.8 BIOLOGY AND NATURAL RESOURCES

Burrowing owls were observed at Castle Air Force Base in 1993 (Department of the Air Force 1994). Suitable burrowing owl habitat occurs at the former Castle Air Force Base and other areas where grasslands, old fields, or agricultural fields exist.

Loggerhead Shrike

The loggerhead shrike is a state species of special concern. The loggerhead shrike is a resident and winter visitor in lowlands and foothills throughout California. Shrikes prefer open habitats (e.g., grasslands, old fields, and agricultural fields) with scattered shrubs, trees, posts, fences, utility lines, or other perches. Shrike populations have declined because of the loss and fragmentation of habitats and pesticide use. The species is still widespread in California.

Loggerhead shrikes have been observed foraging at the former Castle Air Force Base (Department of the Air Force 1994). They could also occur where grasslands, oldfields, or agricultural fields are present in the Planning Area.

4.8.2 REGULATORY FRAMEWORK

FEDERAL

Section 404 of the Clean Water Act

The Corps and U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged and fill material into waters of the United States under Section 404 of the CWA. The Corps' jurisdiction over nontidal waters of the United States extends to the ordinary highwater mark provided the jurisdiction is not extended by the presence of wetlands (33 CFR 328.4). "Waters of the United States" are defined as:

- 1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- 2) all interstate waters including interstate wetlands;
- 3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams and drainages), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which would affect interstate or foreign commerce, including such waters;
 - a) which are or could be used by interstate or foreign travelers for recreational or other purposes; or

4.8 BIOLOGY AND NATURAL RESOURCES

- b) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- c) which are used or could be used for industrial purposes by industries in interstate commerce;
- 4) all impoundments of waters otherwise defined as waters of the United States interstate commerce;
- 5) tributaries of waters identified in 1-4 above;
- 6) the territorial sea; and
- 7) wetlands adjacent to waters (40 CFR 230.3).

Wetlands are defined for regulatory purposes as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For a site to be considered a jurisdictional wetland by the Corps, the site must support the following characteristics:

- A prevalence of hydrophytic vegetation (species with "obligate", "facultative wetland", or "facultative" wetland indicator status in Reed [1988]);
- Hydric soils (soils listed as hydric by the Natural resources Conservation Service [NRCS] and unclassified soils that are saturated or flooded during the growing season long enough to develop hydric soil indicators caused by soil morphogenesis during the growing season); and
- Wetland hydrology (permanent or periodic inundation for 7 days or soil saturation to the surface for at least 14 consecutive days during the growing season) (NRCS, 1991).

The Corps will typically take jurisdiction over that portion of a project site that contains waters of the United States and adjacent or isolated wetlands. This approximates the bank-to-bank portion of a drainage along its entire length, up to the ordinary high water mark, and adjacent or isolated wetlands.

Federal Endangered Species Act

The federal ESA prohibits the "take" of endangered or threatened wildlife species. Take is defined to include harassing, harming (includes significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any

4.8 BIOLOGY AND NATURAL RESOURCES

attempt to engage in such conduct (16 U.S. Government Code [USC] 1532, 50 CFR 17.3). Actions that result in a taking can result in civil or criminal penalties.

The federal ESA and CWA Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of a threatened or endangered wildlife or plant species. The Corps must consult with USFWS when threatened or endangered species may be affected by a proposed project to determine whether issuance of a Section 404 permit would jeopardize the species.

STATE

Section 1600, California Fish and Game Code

Under Chapter 6 of the California Department of Fish and Game Code, the Department of Fish and Game (DFG) is responsible for protecting and conserving the state's fish and wildlife resources. Section 1600 et.seq. of the code describes DFG's responsibilities and states that private and public applicants are required to obtain a Streambed Alteration Agreement (SAA) to "divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or will use material from the streambeds designated by the department." Specifically, Section 1601 agreements are for public applicants and Section 1603 agreements are for private applicants.

The local DFG warden or unit biologist typically has responsibility for issuing Section 1600 agreements. These agreements usually include specific requirements related to construction techniques and remedial and compensatory measures to mitigate adverse impacts. DFG may also require long-term monitoring as part of a Section 1600 agreement to assess the effectiveness of the proposed mitigation.

California Endangered Species Act

The California ESA is similar to the federal ESA, but it pertains to state-listed threatened or endangered species. It requires state agencies to consult with DFG when preparing CEQA documents in order to ensure that the state lead agency actions do not jeopardize the existence of listed species. It directs agencies to consult with DFG on projects or actions that could affect listed species, directs DFG to determine whether jeopardy would occur, and allows DFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. An agency can approve a project that affects a listed species if the agency determines that there are "overriding considerations". However, agencies are prohibited from approving projects that would cause the extinction of a listed species.

4.8 BIOLOGY AND NATURAL RESOURCES

Mitigating impacts on state-listed species involves avoidance, minimization, and compensation (listed in order of preference). Unavoidable impacts on state-listed species are typically addressed in a detailed mitigation plan based on DFG guidelines and input.

DFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. DFG requires preparation of mitigation plans in accordance with published guidelines.

The state ESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. DFG may authorize a taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented.

Relevant Goals and Policies of the Proposed General Plan Update

GOAL CO-5. Minimize impacts of future development on sensitive habitats.

Policy CO-5.1. Where feasible, avoid development in areas identified as sensitive habitat. Where avoidance is not feasible, apply mitigation measures to development projects to minimize impacts to sensitive habitats.

Implementation Program CO-5.a. Require a mitigation program as a condition for any project that proposes the alteration or loss of any sensitive habitat, if avoidance is not a feasible alternative. The program shall include specifications on replacement of sensitive habitat, including ratios for the creation or enhancement of sensitive habitat. The program shall also include monitoring requirements and contingency measures should the proposed program inadequately replaces the loss of sensitive habitat.

GOAL CO-6. Minimize impacts of development on wildlife and wildlife habitat, particularly special status species.

Policy CO-6.1. Consider opportunities for habitat preservation and enhancement in conjunction with public facility projects, particularly parks and storm drainage facilities.

Policy CO-6.2. Encourage the preservation of corridors between natural habitat areas to allow for the movement of wildlife and to prevent the creation of "biological islands".

Implementation Program CO-6.a. When new development or redevelopment activities are proposed in locations with the potential for special status species to occur, require the project applicant to submit a report by a qualified biologist addressing the presence or absence of any special status species on the development site. The report shall include recommendations for avoiding or minimizing impacts on any special status species or habitat found to be present.

4.8 BIOLOGY AND NATURAL RESOURCES

4.8.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Significant impacts that could occur on biological resources are determined from criteria stated in the CEQA Guidelines. A project will normally have a significant impact on biological resources if it will:

- 1) Have a substantial adverse affect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or DFG or FWS;
- 2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or DFG or FWS;
- 3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- 4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or,
- 6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Section 15065(a) of the CEQA Guidelines also states that a project may have a significant effect on the environment when the project has the potential to substantially degrade the quality of the environment; substantially reduce the habitat of fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or, reduce the number or restrict the range of an endangered or threatened species. In addition, because of the sensitive nature and decline of wetland habitats throughout California, the removal, filling, dredging, or damage (direct or indirect) to wetland or riparian areas would be considered a significant impact.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context.

4.8 BIOLOGY AND NATURAL RESOURCES

Substantial impacts would be those that would diminish, or result in a loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but are not significant according to CEQA (e.g., although some impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in a permanent loss of an important resource on a population-wide or region-wide basis).

METHODOLOGY

Available information pertaining to natural resources was reviewed, including: the California Natural Diversity Data Base; the California Native Plant Society (CNPS) inventory; and the Soil Survey of Merced County. In addition, a field survey was conducted by May Consulting in 1998.

PROJECT IMPACTS

Sensitive Plant and Animal Species

Impact 4.8-1 Implementation of the proposed General Plan Update has the potential to disturb sensitive species and habitat. This is considered a **significant** impact.

As noted above, a field survey and research of literature and databases was conducted for the Planning Area in 1998 by May Consulting. As a result of this research, 19 special status plant species and 21 special status wildlife species were identified as existing or having the potential to exist. Two special status plant species, Colusa grass and succulent owl's clover, were discovered in the Planning Area. In addition, five special status wildlife species -- vernal pool fairy shrimp (*Branchinecta lynchi*), Molestan blister beetle (*Lytta molesta*), western burrowing owl (*Athene cunicularia hypugea*), loggerhead shrike (*Lanius ludovicianus*), and tricolored blackbird (*Agelaius Tricolor*) have been observed in or near the Planning Area. The location of these species is shown in Figure 4.8-1 above. In addition, there is a potential presence of an additional 16 special status wildlife species and 17 special status plant species, as shown in Tables 4.3-1 and 4.8-2 above.

Mitigation

Implementation of the following provisions of the proposed General Plan Update substantially reduce **Impact 4.8-1: CO-6, CO-6.1, CO-6.2 and CO-6.2a.**

Implementation of the above-listed goals, policies and implementation programs would reduce **Impact 4.8-1** to **less than significant** by requiring that development projects proposed within areas with the potential to support sensitive species or habitat include a biological study, which identify the extent of the impact and recommend appropriate mitigation.

4.8 BIOLOGY AND NATURAL RESOURCES

Riparian Corridors, Wetlands and Other Sensitive Habitats

Impact 4.8-2 Implementation of the proposed General Plan update has the potential to disturb wetlands and/or other sensitive habitat. This is considered a **significant** impact

Sensitive habitats occurring in the Planning Area include vernal pools and swales, seasonal wetlands, emergent marsh and riparian scrub. These habitat types have all undergone significant losses statewide since the middle of the 19th century. Because these habitats have become scarce, many of their dependent plant and wildlife species have become rare or endangered. All of the sensitive habitats in the Planning Area have the potential to support special status plant or wildlife species. Additionally, these habitats or portions thereof would qualify as wetlands as defined under Section 404 of the Clean Water Act, and would therefore be under the jurisdiction of the Corps. Riparian habitat in the Planning Area consists primarily of open to dense patches of scrub along Black Rascal and Bear Creeks. Vernal pools and swales are limited to an area east of the runways at the CAADC site. In addition to the natural vernal pools and swales, approximately 2.8 acres of vernal pools have been constructed as replacement of vernal pools at the Federal Bureau of Prisons site. Seasonal wetlands occur predominantly within the annual grassland matrix at Castle Airport. There is also a project being undertaken by the Federal Bureau of Prisons that will result in the creation of 1.2 acres of seasonal wetlands as mitigation for impacts at that site. Emergent marsh is present in some slow moving waterways and fringe areas of permanent water such as stock ponds, creeks, and irrigation canals. All these represent potential wetland areas that could be disturbed during development of the Planning Area.

Mitigation

In addition to those listed above, the following provisions of the proposed General Plan Update substantially mitigate **Impact 4.8-2: CO-5, CO-5.1 and CO-5.a**. The following measure is offered to further reduce Impact 4.8-2:

MM 4.8-2a Project applicants proposing development in the areas identified by the discussion for Impact 4.8-2 of this EIR shall conduct a wetlands delineation study in consultation with the US Army Corps to determine jurisdictional status of potentially impacted areas.

Timing/Implementation: Prior to approval of associated grading permits for the willow/wetland area.

Enforcement/Monitoring: City of Atwater Public Works Department; and, U.S. Army Corps of Engineers.

MM 4.8-2b If these features are determined to be Jurisdictional Waters of the U.S. then the wetland delineation map for the project shall be submitted to the Corps.

4.8 BIOLOGY AND NATURAL RESOURCES

The Corps will make a determination on the appropriate permit that would be required for placement of fill. Based on the amount of area that would be impacted, it is anticipated that a Nationwide Permit 26, or its successor, will be sufficient. Upon verification of the delineation, a detailed wetland delineation report and wetland mitigation and creation plan will be prepared for submittal to the Corps and City of Atwater as part of the permit package. Any wetlands that would be lost or disturbed shall be replaced or rehabilitated on a "no net loss" basis in accordance with the Corps mitigation guidelines. Habitat restoration, rehabilitation, retention, and/or replacement shall be at a location and by methods agreeable to the Corps.

Timing/Implementation: Prior to approval of associated grading permits for the willow/wetlands area.

Enforcement/Monitoring: City of Atwater Public Works Department; and, U.S. Army Corps of Engineers.

Implementation of the above-listed goals, policies and implementation programs would reduce **Impact 4.8-2** to **less than significant** by requiring that development projects proposed within areas with the potential to support sensitive species or habitat include a biological study, which identify the extent of the impact and recommend appropriate mitigation. In addition, implementation of the above mitigation measures would reduce potential impacts to Jurisdictional Waters of the U.S. to a **less than significant** level.

Migration Corridors

No migratory corridors were discussed in previous surveys conducted in the Planning Area. However, a variety of habitat sites occurring in the study area could provide migratory corridors for wildlife. Therefore, because of the diversity of species and habitat potentially occurring in the Planning Area, impacts to migration corridors is considered potentially significant. However, implementation of the above-listed provisions of the proposed General Plan Update and MM 4.8-2a and 4.8-2b would reduce any impact to migratory corridors to **less than significant**.

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4.9 Cultural Resources

4.9.1 Introduction

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4.9.2 Project Description

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SECTION 4.9 CULTURAL RESOURCES

4.9 CULTURAL RESOURCES

This section presents the available information on cultural resources in the Planning Area and analyzes the impacts of the proposed General Plan Update on those resources. The impacts of implementation of the General Plan Update are analyzed, and appropriate mitigation is offered.

4.9.1 EXISTING SETTING

PHYSICAL SETTING

As noted in Sections 3.0 and 4.1, the majority of the project site that has not already been developed is agricultural land. As such, much of the land has been disturbed. Although slope varies throughout the Planning Area, the grade is predominantly level, with elevations ranging from 145 to 170 feet above sea level. There are few natural watercourses within the Planning Area; and in fact the most significant waterways are made-made channels (e.g., Livingston and Atwater Canals). There are no significant topographical features within the Planning Area.

Soils in the Atwater area are of the Delhi-Atwater association. This association consists of well-drained, wind-modified, sandy soils. In scattered depressions, the water table is high. Delhi soils consist of sand and loamy sand. Atwater soils are similar, but they have a slight accumulation of clay in their subsoil.

The climate is Mediterranean, with mild winters and hot summers. Temperatures range from an average daily minimum of 36 degrees Fahrenheit (°F) in January to an average daily maximum of 94°F in July. Precipitation occurs primarily during the months of November through March.

PREHISTORIC RESOURCES

Original occupation of the San Joaquin Valley has been established as occurring by 11,000 years before the present. At the time of European contact, the Planning Area was occupied by the Northern Valley Yokuts, a linguistically and geographically distinct division of the larger Yokuts group which lived in the San Joaquin Valley and the Sierra Nevada foothills south of the Fresno River. As many as 41,000 Yokuts may have lived in their homeland before disease and invasions by people of European descent reduced their numbers.

Only a small fraction of Merced County has been surveyed for archaeological or historic cultural resources. Areas containing these resources are often located near natural waterbodies and on elevated grounds.

According to the Castle Reuse Plan EIS, six cultural resource surveys have been conducted within a one-mile radius of the CAADC site, but only one cultural resource has been recorded. CA-MER-254H, consisting of a historic trash scatter, a chert flake and a possible mano fragment, is located north of the CAADC site on the bank of Canal Creek.

HISTORIC RESOURCES

Spanish missionary expeditions explored the area in the early 1800s, but no settlements were founded. American settlers appeared with the stage coach in the 1850s and began growing wheat and raising cattle. By the 1870s, the extension of the Central Pacific Railroad encouraged development, and the agricultural base began to diversify.

Two men have had the greatest influence on Atwater history - John Mitchell and Marshall Atwater. John Mitchell eventually acquired up to a half million acres of land, which he leased out for dry-farming various grains. Upon his death, Mitchell left his estate to the families of three of his nieces. The families formed the company that would lay out the City. Marshall Atwater was a prominent tenant farmer on Mitchell land who later purchased a large tract of land and settled near present-day Atwater. Atwater persuaded the Central Pacific Railroad to place a switch and spur line to his grain warehouse, north of present-day Atwater Boulevard. The community grew and eventually incorporated in 1922. In 1941, Castle Air Force Base was constructed and later became the home of the Strategic Air Command 93rd Bombardment Wing.

Places of contemporary historical significance within the Atwater city limits include the Bloss Mansion, Bloss Library and Castle Air Museum. George Bloss, Jr. was the son of a Mitchell heiress. The Bloss family played a key role in Atwater history and made many contributions to the community, including a hospital and high school scholarships. The Castle Air Museum houses historic aircraft and remodeled World War II barracks. It attracts approximately 120,000 tourists annually.

4.9.2 REGULATORY FRAMEWORK

CEQA GUIDELINES

According to CEQA Guidelines, “A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (Section 15064.5). Substantial adverse change is considered “...physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired (Section 15064.5 [b][2]).

Under the newly revised and recently adopted CEQA Guidelines in Section 15064.5, “historical resource” includes: a resource listed or eligible for the California Register of Historical Resources; or listed in a local register of historical resources; or identified in a historical resource survey and meeting requirements of Section 5024.1 (g) of the Public Resources Code Sections 5020.1 (j) or 5024.1.

4.9 CULTURAL RESOURCES

While the alteration of the setting of an archaeological site that is eligible only for its information potential may not affect the site's significant characteristics, alteration of the property's location (e.g., removing or damaging all or part of the site) may have a significant adverse effect.

CEQA Guidelines Section 15126.4 (b) (3) states "Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature." The guidelines further state that preservation in place is the preferred manner of mitigating impacts, and that preservation "...may be accomplished by, but is not limited to, the following:

- 1) Planning construction to avoid archaeological sites;
- 2) Incorporation of sites within parks, green space, or other open space;
- 3) Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; or,
- 4) Deeding the site into a permanent conservation easement.

CEQA Guidelines state that "when data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken" (CEQA Guidelines, Title 14, Section 15126.4 [b][3][C]). However, "data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have not adequately recovered the scientifically consequential information from and about the archaeological or historic resource" (CEQA Guidelines, Title 14, Section 15126.4[b][3][D]).

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL CO-9. Protect and enhance historical and culturally significant resources within the Planning Area.

Policy CO-9.1. Ensure consideration and proper handling of prehistoric, cultural and archaeological resources during the development process.

Policy CO-9.2. Preserve and maintain structures and features identified as historically significant by the City, including but not limited to, the Bloss Mansion and Bloss Library.

Policy CO-9.3. Encourage public and private efforts to identify, preserve, protect and/or restore historic buildings, structures, landmarks, and important cultural resources.

4.9 CULTURAL RESOURCES

Implementation Program CO-9.a. Attach the following standard condition to all discretionary development projects: "If a previously unknown archaeological site is uncovered during in the course of development, all development activity in the vicinity of the site shall cease until a qualified archaeologist completes an investigation. The archaeologist shall submit a report to the City that includes a determination of the significance of the site and recommendations on its disposition. "

4.9.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Impacts to cultural resources may be considered significant if implementation of the project would result in one or more of the following:

- 1) Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5;
- 2) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or,
- 3) Disturb any human remains, including those outside of formal cemeteries.

California Registry of Historical Resources

Standards of significance for historical resources are found in the implementing regulations for the California Register of Historical Resources (Public Resources Code, Section 4850 et. Seq.). The California Register is an authoritative listing and guide for state and local agencies and private groups and citizens in identifying historical resources. This listing and guide indicates which resources should be protected from substantial adverse change. The criteria used for determining the eligibility of a cultural resource for the California Register are similar to those developed by the National Park Service for the National register of Historical Places. However, criteria of eligibility for the California Register were reworded to better reflect California History.

Any building, site, structure, object or historic district meeting one or more of the following criteria may be eligible for listing in the California Register:

- 1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- 2) It is associated with the lives of persons important to local, California, or national history;

4.9 CULTURAL RESOURCES

- 3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or,
- 4) It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Eligibility for the California Register also depends on the integrity, or the survival characteristics of the resource that existed during its period of significance. Eligible historic resources must not only meet one of the above criteria, but they must also retain enough of the potential to yield significant scientific or historical information or specific data.

Like the process of evaluating historic resources for National Register eligibility, California Register evaluations include the consideration of seven aspects of integrity: location, design, setting, materials, workmanship, feeling and association. The evaluation of integrity must be judged with reference to the particular criteria under which a resource may be eligible for the California Register. However, the implementing regulations specifically caution that alterations of a historic resource over time may themselves have historical, cultural or architectural significance.

Most often, historical resources eligible for the California Register will be 50 years or older. However, new implementing regulations stipulate that “a resource less than 50 years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance.”

METHODOLOGY

Since information on the presence of historic or prehistoric resources in the Planning Area is limited, this analysis focuses on the ability of the proposed General Plan Update goals, policies and actions to identify resources, assess impacts, and reduce any impact to less than significant.

PROJECT IMPACTS

Archaeological and Cultural Resources

Impact 4.9.1 Artifacts, objects and locations associated with an event or person of California or American history or prehistory which constitute resources of importance under CEQA and are eligible for the California Register or National Register may exist within the project site. Destruction or disturbance of such undiscovered resources, whether planned or inadvertent, constitutes a potentially **significant** impact.

4.9 CULTURAL RESOURCES

As noted above, cultural surveys in Merced County are limited. Given the rural nature of the Planning Area, it is quite possible that buildings or other structures of historic significance exist in this area.

Areas containing archaeological resources are often located near natural waterbodies or on elevated grounds. According to the EIS for the Castle AFB Reuse Plan, six cultural resource surveys have been conducted within a one-mile radius of the CAADC site. Only one cultural resource has been recorded. Site "CA-MER-254H", located near an area creek, consists of a historic trash scatter, chert flake, and a possible mano fragment.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce Impact 4.9-1: CO-9, CO-9.1, CO-9.2, CO-9.3 and CO-9.a. Additional mitigation is offered below:

MM 4.9-1a

When appropriate based on the presence of natural features such as water courses or the presence of potentially historic structures, individual applicants for subsequent development projects shall retain the services of a qualified archaeologist to determine the presence and extent of any historic, archaeological or paleontological resources. The recommendations of those studies shall be incorporated into development plans.

Timing/Implementation: As a condition of project approval.

Enforcement/Monitoring: City of Atwater Planning Department.

MM 4.9.1b

If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 7050.5 of California's Health and Safety Code. If the remains are Native American, the coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains and any grave goods.

Timing/Implementation: As a condition of project approval, and implemented during construction activities.

Enforcement/Monitoring: City of Atwater Planning and Public Works Departments.

Implementation of the above mitigation measure will reduce potential archaeological and cultural resource impacts to **less than significant**.

Paleontological Resources

The Planning Area is basically flat and does not include any unique geological features. Paleontological resources are highly unlikely to be present at the depth of disturbance due to build out of the general plan. Any disturbance to such features, in the unlikely event that they are uncovered, is reduced by the above-listed provisions of the proposed General Plan Update, specifically **CO-9.a** and **MM 4.9-1a**. Therefore, the impact of implementation of the proposed General Plan on paleontological resources and unique geologic features is expected to remain **less than significant**.

4.10 PUBLIC SERVICES AND UTILITIES

The mission of the CSU network is to provide a reliable and secure utility service to the citizens of the United States. The network is a critical part of the nation's infrastructure and is essential to the health, safety, and well-being of the American people. The network is a complex system of interconnected systems and is subject to a variety of threats, including natural disasters, cyberattacks, and terrorism. The network is a critical part of the nation's infrastructure and is essential to the health, safety, and well-being of the American people.

4.10.1 Introduction

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SECTION 4.10

PUBLIC SERVICES AND UTILITIES

A. WATER SUPPLY

This section of the EIR addresses the water resources available for the Planning Area. The existing water conveyance, storage, and distribution capacities are discussed and the impacts to those facilities are addressed based upon land uses identified in the Preferred Alternative Land Use Map (Land Use Diagram).

1. EXISTING SETTING

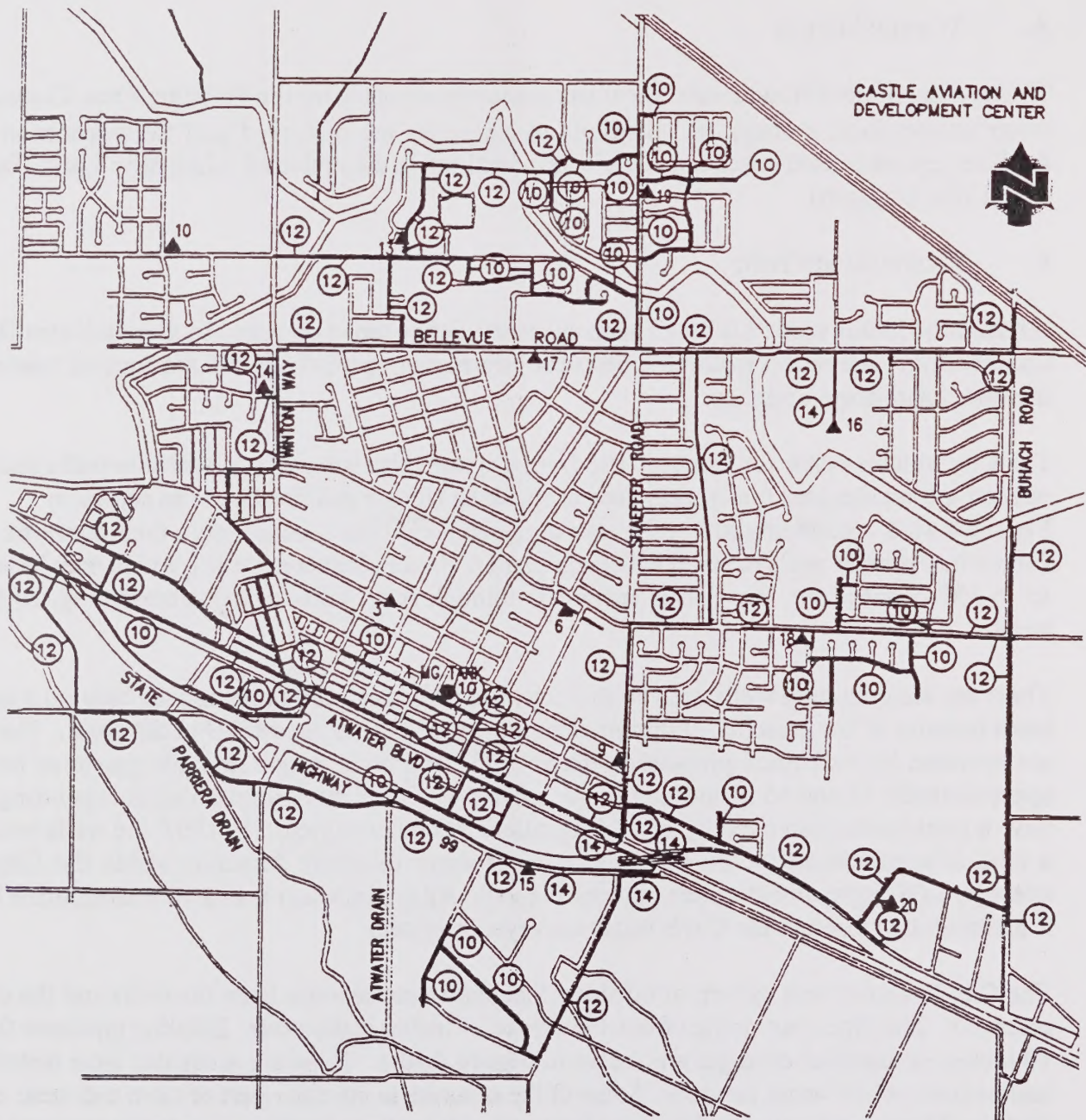
Information in this section is based upon an infrastructure report prepared by Garcia-Davis-Ringler Engineering. The report is also the basis for information presented in the sections on wastewater treatment and storm drainage.

The City obtains water for domestic use from a system consisting of groundwater wells and a one million-gallon elevated tank that is used for peaking storage and fire flows, as shown in

Figure 4.10-1. Residents and businesses in the unincorporated areas obtain their domestic water from either private wells or small water companies. Small water companies, which may have from 15 to 199 connections, serve their customers through small water systems emanating from their wells.

There are ten operating wells used by the City. An additional well (#10) is used only on a standby basis because of the presence of dibromochloropropane (DBCP) and EDB in the water. The wells are operated by individual pressure switches at the wellheads, which regulate pressures between approximately 45 and 65 pounds per square inch (psi). The City estimates that the operating wells have a total production capacity of 17,600 gallons per minute (gpm). In 1997, the wells produced a total of approximately 2.66 billion gallons of water to satisfy demands within the City. On average, 5,067 gpm of water were pumped per day. All groundwater is treated with chlorine before it is distributed through the City's water conveyance system.

The City has a network system of pipelines that distribute the water from the wells and the storage reservoir. The pipes vary in size from 4 inches to 14 inches in diameter. Existing pipelines that are 10 inches in diameter or larger are shown in **Figure 4.10-1**. There are areas that have historically had periods of low water pressure. Some of the areas are in the older part of town and areas east of Shaffer. These areas have smaller sized lines and will continue having lower water pressure unless funding becomes available to retrofit the areas with larger lines. The City is connecting the smaller lines on Shaffer Road when the road is being reconstructed. This will connect many of the smaller lines to a 12-inch mainline and should increase the pressure. The northeast area has also experienced low water pressure. A 1997 report by Boyle Engineering Corporation identified a section of Buhach Road where the installation of a 2,350-foot length of 12-inch pipe would increase the water pressures in the northeast part of the City. The existing million gallon storage tank has only one



LEGEND:

▲¹⁶ Water Well and Number

● 1 Million Gallon Reservoir

○ Existing Water Line 10" or Greater Diameter Shown in Inches

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connection into the water system grid that is 10 inches or larger. The tank would be more effective if there were at least two large line connections into the 12-inch grid.

When the two former base housing projects are considered for redevelopment, the existing water infrastructure needs to be reviewed for the size and quality of lines and how the projects will effect on the City system.

If annexation of the CAADC is pursued in the future, it will trigger the need for more wells and connections into the existing City infrastructure. One consideration is the single 12-inch pipeline at Buhach Road and Santa Fe Drive. Detailed System analysis will need to be done to see whether there should be a second connection or whether additional wells installed at Castle will be sufficient. Recent requests by the Prison Board may trigger the need for the analysis.

Wells 3 and 10 are out of production due to chemical contamination. Wells 9 and 15 are on a stand-by status due to chemical contamination. Well 16 is currently operated by system demand to assist in the TCE removal at the CAADC. By not operating well 16, the TCE plume may not migrate away from the removal equipment at Castle. This project is being studied by Jacobs Engineering.

The City publishes an annual water quality report. The reports from 1993 to 1997 state that the water supplied by the City meets or exceeds all of the standards set by the State of California and by the federal government. City records indicate the amount of chlorine used in the system monthly, and the residual chlorine is tracked.

Due to concerns over groundwater contamination from trichloroethylene (TCE) from the former Castle Air Force Base, regional DBCP and EDB contamination problems and additional City growth, Wells 16, 17, 18, 19 and 20 were added to the City system. These wells are all located in the northeast and southeast parts of the City, in proximity to the CAADC site. The new wells were drilled deeper than previous wells, and they are generally sealed down to approximately 300 feet below ground level to reduce the possibility of contamination.

The CAADC site obtains all of its water from on-site wells. Most of the older, shallower wells that have existed on the site have been taken out of service due to poor water quality or other problems. The airfield and the area to the south are currently served by two newer wells which are approximately 900 feet deep. Combined, these two wells have a maximum production capacity of 2,400 gpm. Three older wells serve minor facilities within the northeast properties on the site.

The *Merced Water Supply Plan Phase III Report* indicates that water use in Atwater will increase from approximately 8,000 acre-feet per year in 1990 to approximately 22,000 acre-feet per year by 2030. The Atwater Water System Evaluation estimated peak hourly demands for future years, based on a 3.2 percent population growth rate assumed in the report. These estimates are presented in **Table 4.10-1** below.

TABLE 4.10-1
PROJECTED WATER DEMANDS FOR ATWATER

Year	Projected Population*	Annual Demand (million gallons)	Average Daily Demand (gpm)
2000	27,765	2,838	5,399
2005	32,188	3,290	6,259
2010	37,315	3,814	7,256
2015	43,257	4,421	8,411

* Excludes potential growth from reuse of Castle AFB.

Source: Boyle Engineering Corp., *Atwater Water System Evaluation*, 1996.

The Merced Irrigation District (MID) and the cities of Merced County cooperated in a regional groundwater study. The Merced Water Supply Plan, which emerged from the study, concluded that groundwater would be the major source of potable water for the County. The plan describes methods and locations for construction of groundwater recharge basins. The City will be involved in the groundwater recharge and monitoring plan.

The City can continue to provide potable water to future development. This will require the drilling of more wells and expanding the existing conveyance infrastructure. The City is in the process of completing a Water System Master Plan, which will facilitate long range planning. Also, the Merced Water Supply Plan will provide direction regarding the long-term source for groundwater. Based on the existing City pipeline layout and the network analysis conducted in 1997, there will be identifiable infrastructure needs, the provision for which will enhance the existing water system. The City will continue to monitor the ongoing groundwater cleanup by the Air Force at the CAADC site, as those efforts will influence the placement of future wells and could affect the water quality of existing wells.

There are presently no substantial water supply limitations that would prevent the reuse or expansion of the CAADC site. The newer wells are deep enough to escape the contamination problems that exist at the shallower wells. If new facilities are to be located in the northeast properties, such as the proposed federal prison, new water supplies will need to be developed to service users in that area.

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-24. Develop and implement Master Facility Plans for sewer, water and storm drainage.

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Policy LU-24.1. Prepare and adopt comprehensive Master Facility Plans for water, sewer and storm drainage systems which address the City's proposed growth areas. The plans should focus on identifying specific future needs, and planning and financing projects designed to meet these needs.

Implementation Program LU-24.a. The City shall incorporate proposed projects from adopted Master Facility Plans into its Capital Improvement Program.

GOAL LU-25. Develop a comprehensive financing strategy for public infrastructure improvements.

Policy LU-25.1. Prepare a financing strategy to accompany the City's Capital Improvement Program. Funding strategies may include, but are not limited to, redevelopment financing, impact fees, assessment districts, and state and federal grant and loan programs.

Implementation Program LU-25.a. Require new development to pay its fair share of costs associated with providing public improvements and services.

3. IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

For the purposes of this EIR, impacts are considered to be significant if the following could result from implementation of the proposed project:

A substantial increase in demand for an adequate domestic water supply and water distribution facilities over the existing conditions; or,

A substantial depletion of groundwater resources which would limit this resource for other potential uses.

METHODOLOGY

The impacts presented below are based on an analysis of the infrastructure report prepared by Garcia-Davis-Ringler Engineering and the proposed General Plan Update.

PROJECT IMPACTS

Water Supply

The City has identified four primary growth areas through the preparation of the 2000 General Plan update. Land use designations have been applied in the Westside, CAADC Fringe and Castle Parkway areas which can be used to estimate the level of infrastructure necessary to provide water,

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sewer and storm drain services in those locations. Land use designations in the Southwest Atwater area will be applied in the future through the preparation of three individual Specific Plans. Since the proposed mix and configuration of land uses in these areas has not been defined at this time, the infrastructure needs for the Southwest Atwater Specific Plan areas will be evaluated in conjunction with the preparation of each individual plan.

The preliminary infrastructure analysis prepared by Garcia-Davis-Ringler Engineering (GDR) for the 2000 General Plan evaluated water facility demand and infrastructure needs to serve the Castle fringe Area which has been divided into three sub-areas referred to as 1A, 1B and 2. The Castle Parkway area has been identified in the analysis as Area 3. The Westside area is identified as Area 4.

Water usage rates used in the analysis are described below :

- Business Park - 1,500 gallons per acre per day (GPD).
- Commercial - 1,500 (GPD).
- Residential - 175 gallons per capita per day (GPCD). Density for residential uses was calculated as follows:
- LDR - 5.0 du/acre with 3.0 persons/unit.
- MDR - 11.0 du/acre with 3.0 persons/unit. HDR - 25.0 du/acre with 3.0 persons/unit.

Table 4.10-2 estimates the average daily water demand associated with the identified growth areas at build out.

Based upon the information provided in **Table 4.10-2**, system expansion average daily use or demand is estimated to be approximately 6.8 MGD. Using a peaking factor of 1.7 for maximum day, the system would require six wells at an average of 1,700 gallons per minute (gpm) to provide maximum day plus fire flow (8,090 gpm + 2,000 gpm). The number of wells will be determined on

TABLE 4.10-2
ESTIMATED WATER DEMAND
ATWATER GROWTH AREAS

Acres	Use	Capita	Water/ GPD	Water/ MGD
Area 1A				
750.0	UR/BP	--	1,125,000	1.125
Area 1B				
550.0	UR/BP	--	825,000	0.825

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Acres	Use	Capita	Water/ GPD	Water/ MGD
Area 2				
520.0	BP	--	780,000	0.78
22.0	COM	--	33,000	0.033
14.0	MDR	462	80,850	0.08085
Area 3				
371.0	BP	--	556,500	0.5565
382.0	COM	--	573,000	0.573
78.0	MDR	2,574	450,450	0.45045
529.0	LDR	7,935	1,388,625	1.388625
Area 4				
152.0	BP	--	228,000	0.228
218.0	COM	--	327,000	0.327
4.0	HDR	300	52,500	0.525
162.0	LDR	2430	425,250	0.42525
Total for All Areas				
3,752.0	All	13,701	6,853,550	6.85

Source: GDR Engineering

the ultimate yield of each well and may require more than six. The existing and planned storage tanks in the City and at the CAADC are proposed to handle peak hour flows of 12,100 gpm, using a peak hour rate of 1.5 times maximum day. The Castle AFB Annexation Feasibility Study (1996) stated that the CAADC was expected to utilize 2.65 to 3.0 MGD at build out and that there would be a grid system of 12-inch and 16-inch lines, at least one production well and another 500,000-gallon storage tank. No map was included in the study, but it was assumed that these components would tie into the proposed expansion grid in the northeast portion of the City.

There are presently no substantial water supply limitations that would prevent the reuse or expansion of the CAADC site. The newer wells are deep enough to escape the contamination problems that exist at the shallower wells.

The City can continue to provide potable water to future development. Therefore, the project's impact is expected to be **less than significant**.

Water Distribution Facilities

Impact 4.10.1 Buildout of the proposed General Plan would require expansion of existing water distribution systems. This is considered a **significant** impact.

As described within the GDR analysis, the provision of potable water at build out of the proposed General Plan will require the drilling of more wells and expanding the existing conveyance infrastructure. The City is in the process of completing a Water System Master Plan, which will facilitate long range planning, and provide more definitive information regarding precise system improvements and refined cost estimates. From this information a system phasing and financing strategy can be developed.

Figure 4.10-2 depicts the layout of the preliminary water plan that has been developed based upon the findings of the GDR analysis. However, until a detailed Master Water Plan is developed, development in the northeast part of town will need to analyze the need for larger lines as part of the development process. The City has required development to extend the 10-inch line from Juniper to Broadway in the southeast part of town. The City has had good water pressures in the northwest part of town, despite the lines being no larger than 8-inch diameter. The fact that well 10 is out of production, will influence any decisions for a new development in the area. If a large development were proposed in the northwest area, a detailed analysis will be required.

The City will also continue to monitor the ongoing groundwater cleanup by the Air Force at the CAADC site, as those efforts will influence the placement of future wells and could affect the water quality of existing wells.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce **Impact 4.10-1: LU-24, LU-24.1, LU-24.a, LU-25, LU-25.1 and LU-25.a**. Additional mitigation is offered below:

MM 4.10-1a Prior to development of a Master Water Plan, individual applicants shall conduct a water study to determine the availability of potable water and the infrastructure required for conveyance.

Timing/Implementation: Prior to approval of development plans.

Enforcement/Monitoring: City of Atwater Public Works and Planning Departments.

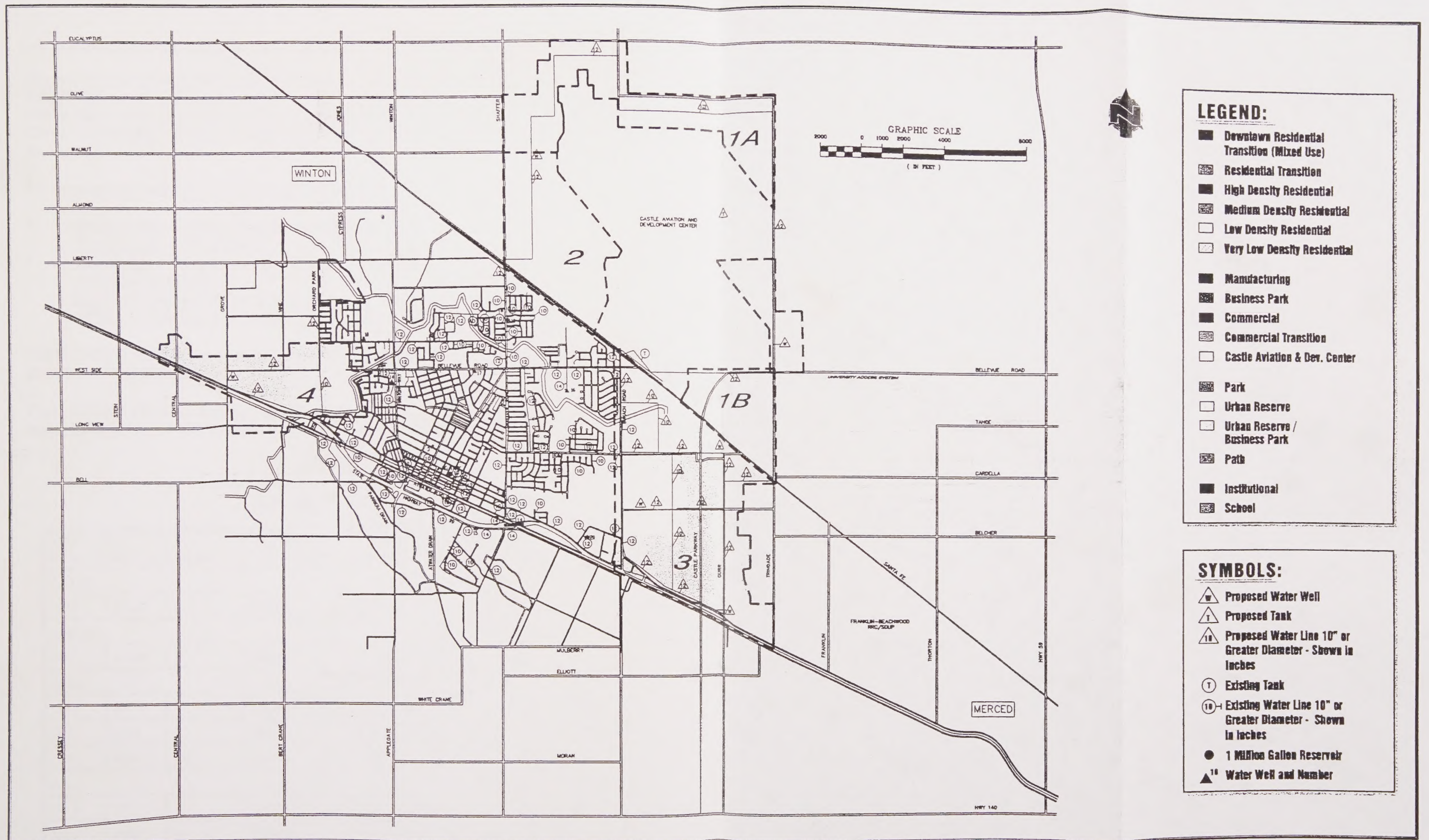


FIGURE 4.10-2
WATER PLAN

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The preliminary infrastructure analysis prepared by Garcia-Davis-Ringler Engineering (GDR) for the 2000 General Plan evaluated sanitary sewer facility demand and infrastructure needs to serve the Castle fringe Area which has been divided into three sub-areas referred to as 1A, 1B and 2. The Castle Parkway area has been identified in the analysis as Area 3. The Westside area is identified as Area 4.

Sewer usage rates used in the analysis are described below :

- Business Park - 1,200 gallons per acre per day (GPD).
- Commercial - 1,200 (GPD).
- Residential - 100 gallons per capita per day (GPCD). Density for residential uses was calculated as follows:
 - LDR - 5.0 du/acre with 3.0 persons/unit.
 - MDR - 11.0 du/acre with 3.0 persons/unit. HDR - 25.0 du/acre with 3.0 persons/unit.

Table 4-10.3 estimates the average daily sanitary sewer demand associated with the identified growth areas at build out.

From **Table 4.10-3**, the system expansion average daily use or demand is estimated to be approximately 4.93 MGD. For their report, GDR assumed 5.0 MGD.

**TABLE 4.10-3
ESTIMATED SANITARY SEWER DEMAND
ATWATER GROWTH AREAS**

Acres	Use	Capita	Sewer/ GPD	Sewer/ MGD
Area 1A				
750.0	UR/BP	--	900,000	0.9
Area 1B				
550.0	UR/BP	--	660,000	0.66
Area 2				
520.0	BP	--	624,000	0.624
22.0	COM	--	26,400	0.0264
14.0	MDR	462	46,200	0.0462
Area 3				
371.0	BP	--	445,200	0.4452
382.0	COM	--	458,400	0.4584

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Acres	Use	Capita	Sewer/ GPD	Sewer/ MGD
78.0	MDR	2,574	257,400	0.2574
529.0	LDR	7,935	793,500	0.7935
Area 4				
152.0	BP	--	182,400	0.1824
218.0	COM	--	261,600	0.2616
4.0	HDR	300	30,000	0.03
162.0	LDR	2430	243,000	0.243
Total for All Areas				
3,752.0	All	13,701	4,928,100	4.93

Source: GDR Engineering

Figure 4.10-4 depicts the layout of the preliminary sanitary sewer plan that has been developed based upon the findings of the GDR analysis. The sewer system was laid out using a series of 10-inch to 21-inch sewer lines and includes lift stations, as well as force mains. The existing treatment plant currently handles approximately 3.0 MGD. The design average dry weather treatment capacity for the treatment plant is 6.0 MGD.

As previously discussed, the CAADC at build out is estimated to generate 2.65 to 3.0 MGD. If only 2.65 MGD were utilized by the CAADC, the remaining 0.35 MGD could be allocated for residential use and would serve approximately 3,500 persons.

In order to accommodate future development within the identified growth areas, a second wastewater treatment plant would be needed. The capacity of the new treatment plant should be at least 5.0 MGD.

Atwater can continue to provide sewage disposal and treatment for development, but improvements and new construction must be planned, designed and constructed. As development occurs, the City will need to have the infrastructure in place. The City has plans to construct facilities or renovate existing facilities to make the plant more efficient. The cannery no longer uses Atwater's WWTP, and that has freed up approximately 3.0 MGD. At build out, the CAADC site will need approximately 2.65 MGD. Currently this capacity is available, but the agreement will need to be renegotiated. The City does not have a Sewer System Master Plan, which makes long-term decisions very difficult to make.

In the near term, extension of sewer lines will be required to service the Price Property Development and the new high school in the eastern section of the City. The applicant for the Price development has plans to install sewer lines along Juniper Avenue, along the west side of the Rancho Del Rey golf

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course, and along Broadway and Green Sands Avenues. These lines would run directly to the treatment plant; thus, the development would not impact existing sewer lines.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce **Impact 4.10-1: LU-24, LU-24.1, LU-24.a, LU-25, LU-25.1 and LU-25.a**. Additional mitigation is offered below:

MM 4.10-2a Until such time that a Master Plan is developed, individual project applicants shall demonstrate available wastewater treatment capacity to serve new development.

Timing/Implementation: Prior to approval of development plans.

Enforcement/Monitoring: City of Atwater Public Works and Planning Departments.

Implementation of the above-listed provisions of the General Plan Update and **MM 4.10-2a** will reduce **Impact 4.10-2** to **less than significant**.

C. POLICE PROTECTION

Police protection services within the City of Atwater are provided by the Atwater Police Department. The Police Department currently operates from the main police station located at Bellevue Road, and it has recently opened a substation at Kelso Street in the northern section of the City. There are currently 39 employees in the Police Department. Of these employees, 29 are sworn officers, 12 of which are patrol officers (Gayle Janz, pers. comm.). For current operations, the Police Department has divided the City into two sectors, north and south. Three patrol areas are identified within each sector. There are no formal "beat" patterns.

Within the unincorporated portion of the Planning Area, services are provided by the Merced County Sheriff's Department. The Sheriff's Department has its main station in the City of Merced and substations in Los Banos and Hilmar. Calls for service in the unincorporated portion of the Planning Area would most likely be handled by the Merced station.

At the CAADC site, with one exception, security services are provided by a private security force employed by the Castle Joint Powers Authority (JPA) under a caretaker agreement with the Air Force. The Hospital Road area on the site is already within the Atwater city limits; thus, police services are provided by the City's Police Department. Studies related to the CAADC site revealed

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that an expansion of police services would be required should the site be annexed to the City. The Annexation Feasibility Study stated that the Police Department had prepared a service analysis in which two options for extension of services upon annexation were deemed feasible:

Option 1 - Increase staff as follows:

1	Dispatcher
10	Officers
2	Sergeants
25%	Commander's Time
10%	Chief's Time

Option 2 - Increase staff as follows:

0	Dispatcher
12	Officers
0	Sergeants
25%	Commander's Time
10%	Chief's Time
1	Community Service Officer

The Department anticipates that revenue generated from property taxes within the CAADC site will offset the initial costs of providing law enforcement services. Additional officers and equipment will gradually be added in the future as development and revenues increase.

The Police Department receives a majority of its funding from the City's General Fund. Grant funds are also utilized, when available, to provide additional revenue for various staff positions and programs. The City currently maintains a standard of 1.2 police officers per 1,000 residents. This standard is expected to be maintained in the future as additional funding becomes available.

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-18. Ensure adequate law enforcement services for residents and businesses in the community.

Policy LU-18.1. Strive to maintain the City's standard of 1.2 police officers per 1,000 residents.

Policy LU-18.2. Require all new development to contribute funding toward necessary law enforcement facilities and equipment.

Policy LU-18.3. Collocate police and fire facilities as appropriate to maximize efficiencies.

Policy LU-18.4. Promote ongoing public safety programs including but not limited to, Neighborhood Watch, child identification and fingerprinting, violence prevention, and other public education and crime prevention efforts.

Policy LU-18.5. Consider public safety issues in all aspects of public facility, commercial, industrial, and residential project design.

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Implementation Program LU-18.a. Forward all new development applications to the Atwater Police Department to ensure that building and site designs consider utilization of crime prevention features and techniques.

3. IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) Increased demand for additional personnel, equipment or facilities that impairs the ability to maintain acceptable service levels.

METHODOLOGY

The analysis of police protection impacts are based upon personal communication with the Atwater police Department, as well as review of the project area and the proposed General Plan Update.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 4.10.3 Implementation of the proposed General Plan Update would increase the demand for police protection services and facilities. This is considered to be a **significant** impact.

Mitigation

Implementation of the following provisions of the proposed General Plan Update would significantly reduce **Impact 4.10-3: LU-18, LU-18.1, LU-18., LU-18.4, LU-18.4, LU-18.5 and LU-18.a.**

Significance After Mitigation

Implementation of the above would mitigate police protection impacts to **less than significant** by requiring adequate project review and funding prior to approval of development plans.

E. FIRE PROTECTION

1. EXISTING SETTING

Fire protection services in the City are provided by the Atwater Fire Department. The Fire Department also provides fire protection service to the CAADC site under a contract with the JPA. Two fire stations are used by the Department. Station #1 is located on Broadway, while Station #2 is located on the flightline at the CAADC site. Public safety impact fees are currently being

4.10 PUBLIC SERVICES AND UTILITIES

collected for the construction of a new fire station in the northern part of the City. The Fire Department has 17 full-time fire fighters and one administrative employee. It also maintains a volunteer company of approximately 25 individuals (Dennis Sparks, pers. comm.). Target response time for fire protection services is five minutes or less. This standard is anticipated to be maintained and gradually improved as funding for the new fire station and equipment become available. The Fire Department currently has an ISO rating of 5 (Sparks, pers. comm.). The ISO rating is a measure of fire protection service, with ratings from 1 to 10, 1 being the best.

Fire flows for the City are approximately 1,000 gallons per minute. All fire hydrants in the City, with few exceptions, are capable of delivering this flow. The Fire Chief stated that the City has a very good water supply and distribution system (Sparks, pers. comm.).

The 1992 Atwater General Plan anticipated that a maximum of two more fire stations would be sufficient to serve the entire Planning Area, and it identified five alternative sites. As part of the Annexation Feasibility Study for the CAADC, the Department estimated that an additional 15 fire fighters would be required to provide adequate service to CAADC. Also, while existing equipment on the site would be useable, the Department stated that it would have to be replaced eventually. New equipment would include a new engine, a heavy rescue vehicle, a command vehicle and a support vehicle.

Fire protection services in the unincorporated areas are provided by the Merced County Fire Department. The County Fire Department has two stations in the Planning Area. Station 82 is located in downtown Atwater, at the corner of High Street and Broadway. The station is shared by the County and City Fire Departments. Station 88 is located in Winton. There is also a California Division of Forestry and Fire Protection station is located on Winton Way above Santa Fe Drive.

In 1996, the Merced County Fire Department performed an assessment of current fire protection needs in the Merced area, and it projected future needs. One option that was selected as part of the preferred alternative for providing future service is the relocation of Station 82 to Applegate Road south of Highway 99. Much of Station 82's primary response area overlaps with the City of Atwater, which already has its own Fire Department. Relocation would increase the amount of County responsibility area within the station's primary response area. It would also provide better coverage to the rapidly growing McSwain-South Atwater area.

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-17. Ensure adequate fire protection for residents and businesses in the community.

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Policy LU-17.1. Maintain the existing target response time of five minutes or less for emergency fire calls through adequate staffing, proper distribution of fire stations and equipment, and the use of automatic aid agreements.

Policy LU-17.2. Require all new development to contribute funding toward necessary fire facilities and equipment.

Implementation Program LU-17.a. Utilize the following factors to determine the location and type of fire fighting equipment that is needed:

- The variety of structures in the area.
- The available water supply.
- The availability of outside aid.
- The amount of area to be protected.
- The kind of fires to be encountered.
- Desired response times.

Implementation Program LU-17.b. Forward all development applications to the City of Atwater Fire Department for that agency's review and input regarding fire safety and emergency access issues.

Implementation Program LU-17.c. Continue to provide fire safety education programs to reduce fire incidents and losses.

3. IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) Demand for additional fire protection staff, equipment or fire stations in excess of the ability of service providers to maintain an acceptable level of service.

METHODOLOGY

The analysis of fire protection impacts are based upon review of the project area, the proposed General Plan Update, and consultations with the City of Atwater Fire Department.

PROJECT IMPACTS

Impact 4.10-4 Implementation of the proposed General Plan Update would require the provision of additional fire staff and services. This is considered a **significant** impact.

The City of Atwater's 2000 General Plan identifies a number of areas that will eventually be developed with industrial, business park and commercial uses. These changes may have an affect on the County's ability to provide service to those areas through the existing Mutual Aid Agreements that are in place. The Merced County Fire Department has indicated that it is in the process of developing plans for a fire station within the Franklin-Beachwood area, but may re-examine this location to eliminate duplication of service and maximize the level of service provided to more intensive growth areas.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce **Impact 4.10-4: LU-17, LU-17.1, LU-17.2, LU-17.a, LU-17.b and LU-17.c.**

Significance After Mitigation

Implementation of the above would mitigate fire protection impacts to **less than significant** by requiring adequate project review and funding prior to approval of development plans.

F. SCHOOLS

1. EXISTING SETTING

The entire Planning Area is located within the Merced Union High School District. As shown in Figure 4.10- existing City Limits, the CAADC area, the Westside area and most of Southwest Atwater are within the Atwater School District. The southern portion of Southwest Atwater, all of McSwain, and the western half of the Castle Parkway area are within the McSwain School District. The eastern portion of the Planning Area, most of which is expected to remain in current Merced County agricultural and open space uses, is located within the Merced City School District. A small portion of the Planning Area North of Camellia and west of Santa Fe Drive is within the Winton School District. Land uses proposed in that area include Urban Reserve, Very Low Density Residential and Commercial.

ELEMENTARY AND INTERMEDIATE SCHOOLS

The Atwater Elementary School District serves school-aged children in grades kindergarten through eighth (K-8). Its boundaries include the Atwater city limits, the CAADC site, and unincorporated areas west of the City. Within the Atwater District, there are eight general education facilities. Six

elementary schools serve students in kindergarten through sixth grade (K-6), and one junior high school serves seventh and eighth grade students. One other school teaches students from kindergarten to the 8th grade. The total enrollment in the Atwater District for the school year 1997/98 was 4,430 students. Excluding enrollments generated by the former Castle Air Force Base, the Atwater District has experienced an 8.3 percent average annual growth rate in enrollment during the period from 1985 to 1995.

The Atwater District's 1998 Facilities Master Plan indicates that the total enrollment is currently below overall facility capacity. However, enrollment at one school - Elmer Wood Elementary - has exceeded capacity. At another school, Peggy Heller, enrollment for grades 7-8 has exceeded the capacity of the facilities provided for these students. The number of students in the Atwater District is expected to increase, based on the projected increase in housing construction. Using a model that incorporated conservative assumptions about growth, the Facilities Master Plan forecasted a total student enrollment of 5,404 by the year 2005. By this projection, the number of K-6 students would exceed current capacity by 567, and the number of 7-8 students would exceed capacity by 92. Moreover, under a state budgetary policy, class sizes in the first to third grades are encouraged to be reduced to a student/teacher ratio no greater than 20:1. This program may be expanded to other grades in the near future, which would place even greater demands on school facilities.

The extra 7-8 grade students could be accommodated by the addition of modular classrooms at the schools serving these students. However, a new elementary school would be needed by 2003 to handle the extra number of K-6 students. The Facilities Master Plan recommends a 10-acre parcel north of Juniper Avenue and within the current Bellevue Elementary School attendance boundary as the site on which to construct the new school. The estimated cost of the new school would be approximately \$5,650,000. It is also estimated that another \$14,866,000 would be needed to modernize existing school facilities. The Atwater District currently collects the maximum allowable development impact fee of \$1.84 per square foot of new residential construction, part of which goes to the Merced Union High School District. Proceeds from this fee were calculated to be insufficient to fund the facilities needed for projected increases in the number of students. Other funding options, such as a general obligation bond and a Mello-Roos district, have been suggested.

Also in the City, there is one parochial school (St. Anthony's) and two other private schools operated by religious organizations. Outside Atwater, in the southeastern portion of the Planning Area, the McSwain School District provides K-8 education. The current (1992) General Plan identified four possible future school sites in the McSwain area.

The McSwain School District presently holds title to a fifteen acre site located at Buhach Road and Moran Avenue and is in the process of obtaining the adjacent 25 acres from Merced County. Current planning calls for construction of a school/park facility on this property.

HIGH SCHOOLS

Within the Planning Area, high school education is provided by the Merced Union High School District. The District has four comprehensive high schools and one continuation school. One of the comprehensive high schools is Atwater High School, located along Winton Way. 1999 enrollment figures indicate that 2,600 students presently attend Atwater High School. According to a Development Fee Justification Study prepared for the District, current enrollment at Atwater is 761 students over the high school's capacity. The District has prepared working drawings for the modernization of Atwater High School. Plans include the renovation of both permanent and portable classrooms, the gymnasium and the library.

The District has begun to construct another high school in the Atwater area - Buhach High School, near the intersection of Buhach Road and Avenue Two southeast of the City. The new high school will have an initial capacity for 1,504 students, but plans indicate that ultimate capacity will be 1,700 students. Acquisition of land for Buhach High School took place in 1991, but the closure of Castle Air Force Base postponed the need for opening the facility. Buhach High will open in September 2000 or 2001, depending on state funding.

In 1997, the Merced Union High School District charged a residential development fee of \$1.84 per square foot. The elementary school districts within the District boundaries receive two-thirds of the proceeds; the District keeps the remainder. On January 1998, the State Allocation Board authorized an increase in the maximum statutory development fees to \$1.93 per square foot for residential development. Commercial/industrial development fees also were authorized to be increased from a maximum of \$0.30 per square foot to \$0.31. The District currently does not charge commercial/industrial development fees, but it may do so in the future if revenues from residential development fees are inadequate to fund new facilities that handle demand generated by new development. Within the Winton and McSwain Elementary School Districts, a fee on new residential development of \$3.41 per square foot has recently been authorized. The elementary school district would receive 59 percent of the proceeds, and the high school district would receive the remainder.

POST-SECONDARY EDUCATION

There are no colleges or other institutions of higher learning within the City. The nearest college is Merced Community College in the City of Merced. Merced is also home to a branch of Chapman University, a private university that specializes in education for working adults. Other colleges within a 60-minute commute from the City include Modesto Community College, California State University Stanislaus in Turlock, Fresno Community College and California State University Fresno. The University of California plans to build a campus north of Merced, adjacent to Lake Yosemite. The new campus, which will be called UC Merced, is scheduled to teach its first classes in 2005.

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-20. Provide primary and secondary educational facilities to accommodate projected enrollments.

Policy LU-20.1. Work with local school districts to identify appropriate locations for future school sites and facilities.

Implementation Program LU-20.a. The City shall monitor residential growth within the City and make that information available to local school districts to facilitate school planning efforts.

Implementation Program LU-20.b. The City shall explore opportunities for new school facilities to include "joint use" facilities for other City, County and secondary education service provider programs and services.

GOAL LU-21. Maintain and enhance the quality of educational opportunities available to Atwater residents.

Policy LU-21.1. Support efforts by the Atwater Elementary School District, McSwain School District, Merced City School District, Winton School District, and the Merced Union High School District to secure adequate funding for new facilities by Proposition 1A funding, under the provisions of SB 50, as appropriate.

Policy LU-21.2. Continue to support the collection of school fees consistent with the maximum allowable amount permitted under state law.

Policy LU-21.3. Provide adequate infrastructure for new school facilities in a timely manner.

Implementation Program LU-21.a. The City shall provide timely and accurate information required by the school districts for any school facilities needs analysis conducted in order to secure adequate funding via development fees, as required by SB 50.

Implementation Program LU-21.b. The City shall revise its Capital Improvement Program to schedule and fund necessary infrastructure improvements in areas where new school facilities will be constructed before such facilities are scheduled to be open.

3. IMPACTS AND MITIGATION

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) Result in the need for new or altered facilities or would adversely impact existing school services.

METHODOLOGY

The analysis of public school impacts are based upon consideration of the estimated student generation of the project and consultations with the school districts that would serve the Planning Area.

PROJECT IMPACTS

Impact 4.10-5

Implementation of the proposed General Plan Update would require additional school staffing and the construction of additional school facilities. This is considered a **significant** impact.

Elementary School

The District has estimated that at full build out, the City's General Plan would generate approximately 746 additional students that would need to be served by their facilities. This number is based on the student generation rates calculated in their June 1999 Development Fee Justification Study, prepared by Michael Paoli & Associates.

In order to provide such services, the District has recommended that a 20 acre school site be designated for the construction of a new campus. This site should be located within a residential zone, away from industrial and commercial sites. The District also indicated that the General Plan should ensure ease of access for school pupil transportation via school bus, including adequate driving lanes and appropriate loading zones for pupils. A future school site has been indicated on the Land Use Diagram. This location should be considered approximate. Minor adjustments to the location may be necessary based upon land availability, safety, and access concerns. Modifications to the school site location would not require a General Plan amendment

High School

Upon reviewing the City of Atwater's 1999 General Plan Land Use Diagram, representatives from the Merced Union High School District have estimated that at General Plan build out, approximately 5,160 high school students will be need to be accommodated based upon the current student yield

per household. The projected capacity of Atwater High School and the proposed Buhach High School is 4,000 students combined.

1,160 students above projected capacity is noted as insufficient to justify a third high school, however, it is enough to make both high schools very crowded.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce **Impact 4.10-5: LU-20, LU-20.1, LU-20.a, LU-20.b, LU-21, LU-21.1, LU-21.2, LU-21.3, LU-21a, and LU-21.b.**

Implementation of the above would mitigate impacts to schools to **less than significant** by requiring adequate project review and funding prior to approval of development plans.

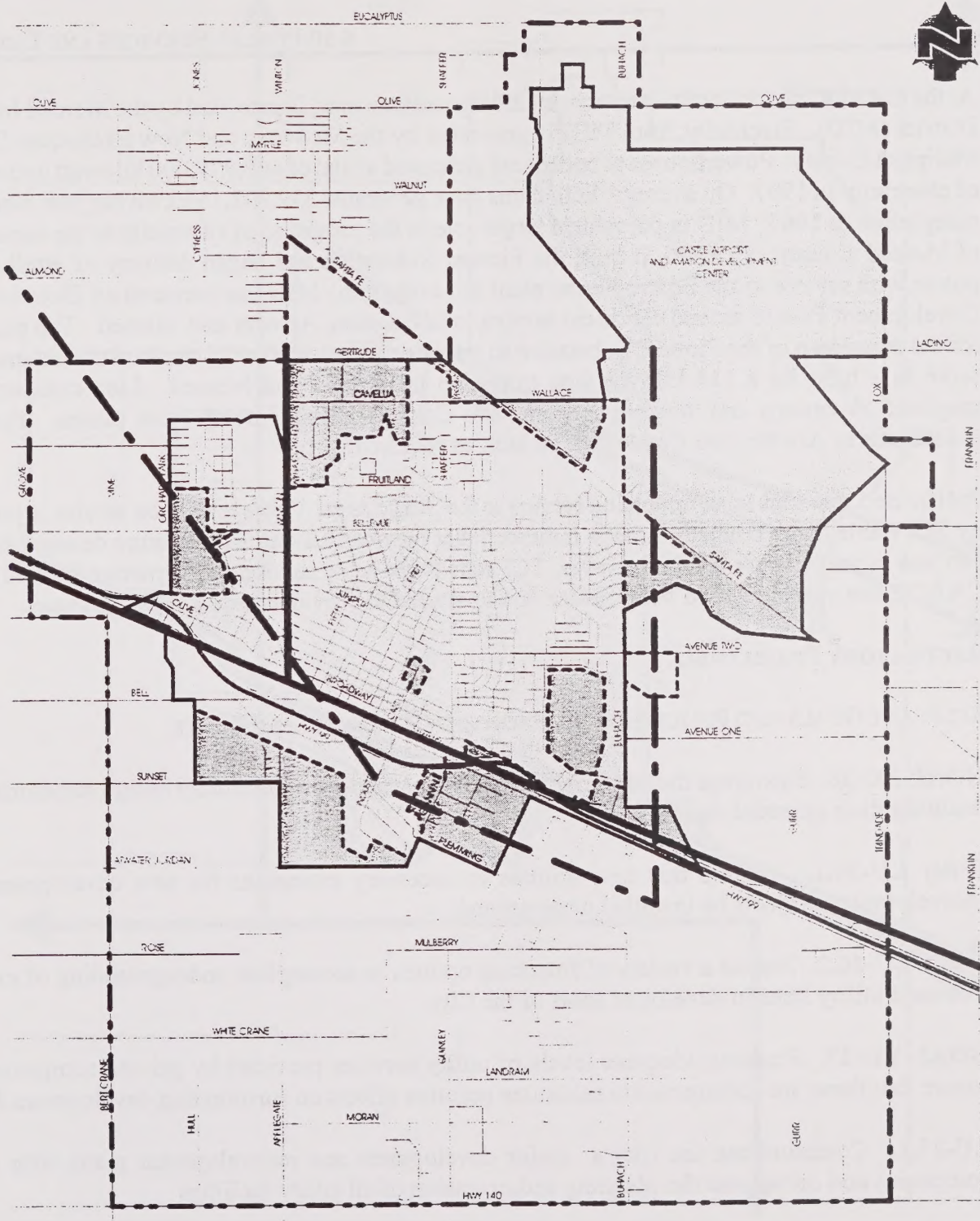
G. ENERGY AND COMMUNICATION SYSTEMS

As shown in **Figure 4.10-5**, the Highway 99 corridor contains a major natural gas main and crude oil pipelines. The gas main pipeline has an offshoot line running directly north through town, beginning approximately at the intersection of Atwater Boulevard and First Street. A "product pipeline" ran diagonally across the southwestern city limits to the intersection of Buhach Road and Highway 99, where two fuel storage tanks held jet fuel for use at Castle Air Force Base. The line subsequently ran north to the base. It is not known if this pipeline is still in use.

The Mojave Pipeline Company, a subsidiary of El Paso Energy Company, had plans to construct an extension of a natural gas pipeline from the Mojave Desert through the San Joaquin Valley to the San Francisco Bay Area. The proposed pipeline route would have gone through the City within the Union Pacific Railroad right-of-way. However, the pipeline has not been constructed, and the project is not listed in El Paso Energy's most recent five-year strategic plan (L. E. Simmons, pers. comm.).

Major electrical transmission lines also run through the Planning Area as depicted in **Figure 4.10-6**. One goes along Applegate Road and Winton Way, extending from a line south of the City to a substation northeast of Cressey. Another line runs south of the City near Rose and Mulberry Avenues. Two lines run between Bellevue Road and Santa Fe Avenue southeast of the CAADC site before converging at a substation at the intersection of Shaffer Road and Santa Fe Drive.

Electrical and natural gas service has been provided by Pacific Gas & Electric (PG&E), primarily from fossil fuel and hydroelectric sources. According to the current General Plan, future supplies were anticipated to be adequate, and no transmission problems were foreseen. Beginning in March 1998, California deregulated the electric utility industry, allowing utility customers to select from a variety of electricity suppliers. Thus, PG&E is no longer the sole supplier of electricity. However, it is still responsible for the transmission of electricity and for the maintenance of the delivery system.



LEGEND:

- -- Project Study Limits
- Atwater City Limits

- Sphere of Influence (1984)
- Product Pipeline (C.A.F.B.)
- Natural Gas Main Lines



Castle Airport & Aviation Development Center

At the CAADC site, electrical service, including maintenance, is provided by the Merced Irrigation District (MID). Electricity from MID is generated by the McSwain and New Exchequer Dams in Mariposa County. Powerhouses at both dams generated a total of 460,979,000 kilowatt hours (kwh) of electricity in 1997. On average, both dams have generated 332,992,155 kwh per year since their completion in 1967. MID is pursuing a larger role in the provision of electricity to the eastern part of Merced County. In 1996, it built the Pioneer Substation and began delivery of retail electric power with service to the Foster Farms plant in Livingston. MID has prepared an Electric Utility Development Plan to extend electrical service to Livingston, Atwater and Merced. The plan calls for the expansion of the Pioneer Substation to provide service to other Livingston customers and to serve as a base for a 115 kilovolt line extension to Atwater and Merced. Line extensions are proposed to eastern and western Atwater and Castle Airport, among other places. Proposed substations in Atwater and Castle will be built as required.

Pacific Bell provides local telephone service to the Study Area. Cable television service is provided by TCI Cable. Both companies have indicated that they can accommodate future demand for their services in the Atwater area. However, TCI stated that cable service infrastructure located on the CAADC site would have to be extended and upgraded to provide adequate service there.

REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-26. Encourage the conformance of utility systems to community design standards while retaining their essential functions.

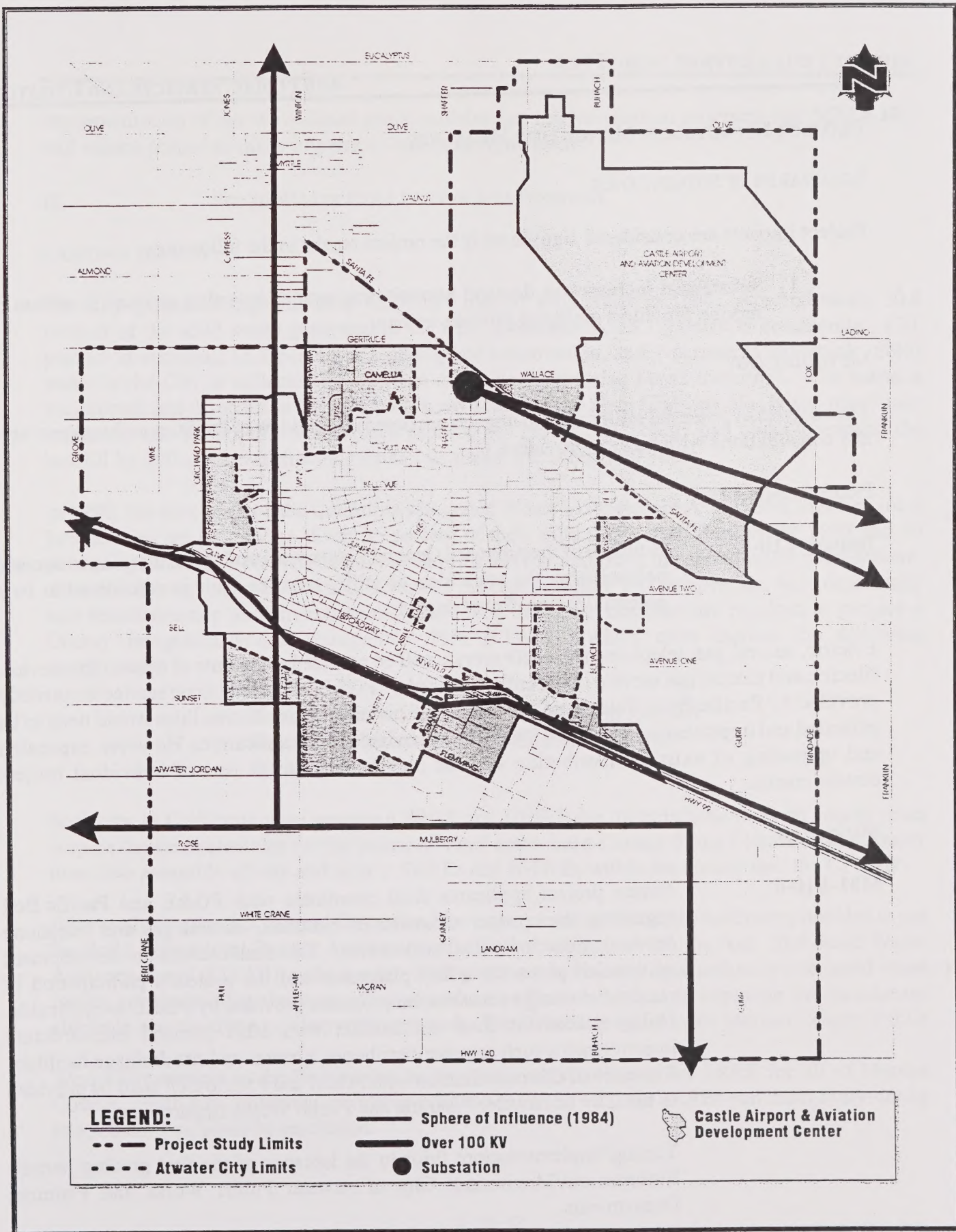
Policy LU-26.1. Require that new utilities or necessary extensions for new development and redevelopment projects be installed underground.

Policy LU-26.2. Pursue a variety of financing options to accomplish undergrounding of existing overhead utility lines in developed areas of the City.

GOAL LU-27. Promote adequate levels of utility services provided by private companies and ensure that these are constructed to minimize negative effects on surrounding development.

Policy LU-27.1. Communicate the City's major development and redevelopment plans with utility companies and coordinate the planning and extension of all utility facilities

Policy LU-27.2. Promote technological improvements and upgrading of utility services throughout the community.



PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) Substantial increases in demand necessitating new or extended services in excess of service providers ability to provide service.

METHODOLOGY

The analysis of potential utility system impacts are based upon review of facilities in the project area and consultations with service providers.

PROJECT IMPACTS

Impact 4.10-6 Buildout of the proposed General Plan would result in an increase in demand necessitating the expansion of utility services. This is considered to be a potentially **significant** impact.

Electric, natural gas, telephone and cable service will be provided at the time of request for service. Electric and natural gas service is currently provided by PG&E, while telephone service is currently provided by Pacific Bell. Telephone, electrical, and natural gas distribution lines would need to be extended and improved to PG&E and Pacific Bell standards and specifications. However, expansion and upgrading of existing distribution systems may be required as part of individual project developments.

Mitigation

MM 4.10-6 Future project applicants shall coordinate with PG&E and Pacific Bell regarding the proper extension of electrical, natural gas and telephone services to the individual project sites. This shall include the development of detailed plans for utility placement and the project's participation in residential energy conservation programs provided by PG&E as applicable. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with PG&E and Pacific Bell shall be provided to the City of Atwater Planning and Public Works Departments.

Timing/Implementation: Prior to the issuance of the first grading permit.
Enforcement/Monitoring: City of Atwater Public Works and Planning Departments.

Implementation of the above-listed goals, policies and implementation programs and **MM 4.10-7** will reduce potential utility impacts to **less than significant**.

H. SOLID WASTE COLLECTION AND DISPOSAL

EXISTING SETTING

The City generated approximately 23,570.87 tons of solid waste in 1990. Approximately 30.6 percent of the solid waste generated in the City is residential, 30.1 percent is commercial, 17.1 percent is self-haul, 15.2 percent is building and construction, and 7 percent is industrial. Solid waste in the City is collected by a private contractor, Browning Ferris Industries. The waste is transported and disposed in the Merced County Landfill, off State Highway 59. It was previously estimated that the landfill would reach capacity by 1995. The County had plans to expand the landfill by 200 acres, which would extend its useful life another 19 years.

In 1989, the state enacted the California Integrated Waste Management Act. Under this Act, local jurisdictions are required to divert 25 percent of their solid waste from disposal by 1995 and 50 percent by 2000. The Act sets the following priorities for promoting integrated waste management: diversion through source reduction, diversion through recycling and composting, environmentally safe transformation and environmentally safe land disposal. Counties are required to prepare a County Integrated Waste Management Plan (CIWMP) which must include the following components:

- Source Reduction and Recycling Element (SRRE)
- Household Hazardous Waste Element (HHWE)
- Siting Element

Each city in California must prepare a SRRE and HHWE for its jurisdiction. Each county must prepare the same elements for the unincorporated areas and a County Siting Element. The county must also assemble all city and county SRREs and HHWEs within the county into the CIWMP.

After analyzing the Act, Merced County and the incorporated cities within the County decided to use the Solid Waste Joint Powers Agreement to address compliance with the Act. The Solid Waste Advisory Board (SWAB), authorized by the Agreement and having legal authority over solid waste issues, concluded that the most efficient and cost-effective method to complete the mandatory elements was to utilize a countywide approach. The SWAB designated the Merced County Public

Works Department as the lead agency in preparing and developing the SRRE for all of Merced County. Each city, however, maintains ultimate control over their SRREs and must individually adopt their own plans by resolution.

An analysis of the composition of the City's waste sent to the landfill revealed this breakdown:

Paper	30.8%
Organics (food wastes, tires, ag residues, textiles/leather)	28.1%
Yard wastes	18.3%
Plastics	8.5%
Metals	4.2%
Glass	1.5%
Other wastes (inert solids such as rock and concrete)	8.6%
Special waste (ash, sludge, auto bodies etc.)	Negligible

As of 1990, the City was diverting 4 percent of its waste. To meet the mandated state goals, the City adopted a SRRE with these components:

- 1) The City will implement *source reduction* by encouraging home composting and modifying the City's procurement policies to favor recycled, durable and repairable products.
- 2) The City will participate in a regional *recycling* program that will include a mobile dropoff facility, buyback/dropoff facilities for individuals and business that wish to presort and sell recyclable materials, a material recovery facility (MRF) at the landfill, and source-separated residential collection of newspaper and corrugated cardboard.
- 3) The City will participate in a regional *composting* facility that produces a soil enhancement product, using green wastes from self-haulers and residential collection.
- 4) Recover *special wastes* by recycling tires or by using them as paving material, and by recovery of "white goods" (e.g. large appliances) at the landfill.
- 5) An education and public information program to increase awareness of the importance of source reduction and recycling and of the means to implement these programs.

Implementation of the components of the City's SRRE has been slow. In part, this has been because the City is participating in a regional approach to meeting the state's waste reduction goals, an approach that has received the state's approval. Recycling programs in the City are conducted on a voluntary basis, with no mandatory source separation (Jerry Lawrie, pers.comm.).

The City has adopted the HHWE element prepared by Merced County, an element that applies to both the incorporated and unincorporated regions within the County. Household hazardous waste is defined by the California Integrated Waste Management Board as "any discarded material from homes that may threaten human health or the environment if disposed of incorrectly." Examples include household cleaners, aerosols, solvents and thinners, and automobile fluids. The Merced County HHWE proposes the establishment of a permanent collection site at the Highway 59 landfill and temporary collection sites within or adjacent to the incorporated cities, with two vehicles to transport the waste from the temporary collection sites to the permanent site. Another component is a load checking program at both County landfills, to monitor the quantity of household hazardous

waste entering the normal solid waste stream. The Merced County Association of Governments (MCAG) will implement an educational program to promote public awareness and participation in the safe use, storage and disposal of household products that are potential hazards.

3. REGULATORY FRAMEWORK

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000.

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL CO-8. Strive to meet or exceed the waste diversion and reduction goals established by Public Resources Code 41780.

Policy CO-8.1. Continue to implement all components of the adopted Source Reduction and Recycling Element.

3. IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) Create a demand for solid waste services and generate solid waste in an amount greater than the ability of local landfill facilities to accommodate such waste.

METHODOLOGY

The analysis of solid waste service impacts are based upon consideration of the estimated amount of solid waste anticipated to be generated by individual projects and consultations with the Merced County Department of Public Works.

PROJECT IMPACTS

As noted above, the Merced County Landfill has sufficient capacity to accommodate the project. Browning Ferris Industries will continue to transport solid waste to the landfill. Thus, the project's impact to solid waste services is considered to be **less than significant**. No mitigation is necessary.

I. PARKS AND RECREATION

Recreational lands are different from other open space lands by their availability for public access and direct recreational uses. These lands vary by size, use and facilities. The National Recreation and Parks Association (NRPA) has developed definitions for types of recreational facilities which, with modifications, are as follows:

Mini-park: A specialized facility that serves a concentrated or limited population or specific groups such as tots or senior citizens. This facility should be located within neighborhoods and in close proximity to apartment complexes, townhouse development or housing for the elderly.

Neighborhood park: Area for intense recreational activities such as field games, court games, crafts, playground apparatus, skating, picnicking, wading pools etc. Neighborhood park sites should be suited for intense development, easily accessible to neighborhood populations and geographically located for safe walking and bicycle access.

Community park: Area of diverse recreational value including intense recreational facilities such as athletic complexes and pools, as well as more passive uses such as picnicking, viewing, nature study and other types of recreational development.

Regional park/Park preserve: Area of natural or ornamental quality for outdoor recreation such as picnicking, boating, fishing, swimming, camping and trail uses, with much of the land reserved for conservation and natural resource management.

The NRPA also describes several other types of recreational facilities: "linear parks" for hiking, bicycling, and horseback riding; "special use" areas for such activities as golf, gardens, outdoor

theaters and other specialized recreation; and "conservancies" designated for the protection and management of natural or cultural resources.

State law and policies, as expressed particularly in the requirements for the Open Space Element of the General Plan, promote the retention of open space for recreational purposes. Beyond the general requirements, however, no specific standards have been established. Rather, it has been left to the local governments to decide how much land should be set aside as open space. The NRPA has established guidelines for the amount of recreational land necessary to serve a given population. These guidelines, presented in **Table 4.10-4** below, are oriented largely toward more metropolitan areas. For example, a "neighborhood park" as defined by NRPA would serve a population of up to 5,000 people. Therefore, the NRPA advises each jurisdiction to establish its own standards that are tailored to the unique characteristics of the area, rather than to adopt the guidelines verbatim.

The NRPA noted that increased development density and trends toward apartment living are inducing a greater reliance on public recreation space. As community development proceeds, informal recreation spaces such as streets and vacant lots will become increasingly scarce. In addition to public recreation spaces, there will be a need to provide adequate on-site recreational space as a part of proposed housing developments, particularly in multi-family developments.

TABLE 4.10-4
NRPA RECREATION LAND GUIDELINES

Type of Park	Service Area Radius	Desirable Size	Acres/1,000 Population
Mini-park	< 1/4 mile	1 acre or less	0.25 - 0.5
Neighborhood Park	½ - 1 mile	15+ acres	1.0 - 2.0
Community Park	1 - 2 miles	25+ acres	5.0 - 8.0
Regional Park	1 hour drive	200 - 1,000 acres	Variable
Total			6.25 - 10.5

RECREATIONAL LANDS INVENTORY

The Atwater Recreation Department manages park and recreational facilities in the City, including the Atwater Community Center. There are 18 parks within the City. **Table 4.10-5** lists all of the City parks, along with the acreages and facilities offered. Within the Atwater city limits, there are 77.62 park acres, which is approximately 3.37 park acres per 1,000 population. This is below the

ratios recommended in the NRPA guidelines. However, as stated earlier, the City is not required to maintain a particular parkland ratio.

Even before the closure of Castle Air Force Base, some of the recreational facilities on the base have been open to the public. Veterans Park, located at the intersection of Bellevue and Buhach Roads, contains a picnic area that was open to the public during working hours. It also has a youth center, and softball and football/soccer fields. Veterans Park is now managed by the Atwater Recreation Department. Other base facilities now potentially available to the public include a gymnasium and a recreation center. Southeast of the gymnasium are two baseball fields, a football/soccer field, a running track and a cross-country running course. Located in the same block as the recreation center are a large outdoor swimming pool and tennis courts. Another pool and more tennis courts are located near the Officers' Club building.

In addition to the parks, there are other facilities in the City that are used for recreational activities. The Atwater Community Center, located at 760 East Bellevue Road, contains a multi-use room and a senior citizens' room, along with kitchen and restroom facilities. Future plans for the Community

Center include the expansion of the multi-use room and the addition of a teen room and an arts and crafts room. The Youth Center at Veterans Park has an indoor basketball court and several activity rooms. The facility hosts a Boys and Girls Club. Another specialized recreational facility is the Rancho Del Rey golf course, a private facility located within the southeastern section of the City, but under the jurisdiction of Merced County.

Beyond the Atwater city limits, a county park is located in Winton. Another county park, outside the Study Area, is Lake Yosemite northeast of Merced. This park offers boating, swimming, fishing, waterskiing, windsurfing and picnic areas. The Merced Irrigation District manages the Lake McClure-McSwain Recreation Area 27 miles northeast of Merced. There are campsites available, along with picnic areas, boating, waterskiing, fishing, swimming and hiking activities. Approximately 75 miles northeast of Atwater is Yosemite National Park, a highly popular attraction offering numerous scenic vistas and recreational opportunities.

**TABLE 4.10-5
CITY OF ATWATER PARKS**

Park Name	Acres	Location	Facilities
Albani Park	5.00	East Grove Ave.	Picnic tables, soccer fields
Bloss Park and Grounds	1.70	Area bounded by Broadway, First St., Drakeley Ave. and Second St.	Picnic tables, decorative fountain, rose garden, Bloss House Museum
Veterans Park	17.90	Buhach Rd. @ N. Bellevue Rd.	Playground equipment, picnic tables, barbecues, picnic shelter, ball fields with dugouts and lights, tennis court, basketball court
Cedar Park	0.90	Cedar Ave. @ Packers St.	Playground equipment, barbecues, picnic tables
Civic Center Grounds	3.87	750 Bellevue Rd.	Picnic table, decorative fountain, rose garden
Community Center Grounds	3.70	760 E. Bellevue Rd.	Decorative fountain, benches
E.L. Walters Park	2.30	Alabama St. @ Village Circle Dr.	Playground equipment, picnic tables
Girl Scout Hut Open Space	1.47	1659 Second St.	Picnic tables, fire pit, clubhouse
Heller Park	0.74	Heller Ave. @ Herman St.	Playground equipment, barbecue, picnic tables, tennis court
Joan Faul Park	9.90	2001 Bridgewater St.	Playground equipment, picnic tables, restroom facility, soccer fields
Lakewood Park	4.80	Lakeview Dr. @ Shoreline Dr.	(unimproved)
Memorial Ball Park	2.49	Elm St. @ Packers St.	Baseball field with dugouts, backstop, scoreroom, concession stand, lights and restroom facilities

Park Name	Acres	Location	Facilities
Osborn Park	14.00	Bellevue Rd. @ Livingston Canal	Playground equipment, picnic tables, barbecues, lighted tennis courts, ball fields, concession stands, scoreboards, restroom facilities, horseshoe pits
Power Line Open Space	1.77	Channel Ave. @ Shaffer Rd.	Open turf
Ralston Park	4.84	Third St. between Fir Ave. and Grove Ave.	Playground equipment, picnic tables, barbecues, tennis court, restroom facilities, picnic shelter
Sandlewood Basin	1.75	Winton Way @ 250' South of Carter Way	Open turf
Winton Way Park	0.41	1392 Winton Way @ Elm Ave.	Picnic tables

Source: City of Atwater (Recreation Superintendent's Office)

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

GOAL LU-23. Develop a comprehensive strategy for parkland acquisition, construction and maintenance which meets the community's adopted standards for recreation facilities.

Policy LU-23.1. Strive to maintain or exceed a minimum standard of 3.0 acres of public park land per 1,000 population.

Policy LU-23.2. Ensure that park and recreation facilities are distributed equitably throughout the community.

Policy LU-23.3. Identify areas of the City that are deficient in park and recreational facilities and assign top priority for future park construction to these areas.

Policy LU-23.4. Incorporate park and recreation facilities within the CAADC into the City's park system, as appropriate.

Policy LU-23.5. Encourage private ownership and operation of park and recreation facilities located within the CAADC that are not incorporated into the City's system.

Implementation Program LU-23.a. Prepare a master plan for City parks and recreational facilities that prioritizes needs, identifies sites for new facilities, and establishes funding mechanisms. The financial strategy may include, but not limited to, parkland fees, grant funding, public-private partnerships, and opportunity purchases.

3. IMPACTS AND MITIGATION

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) The project will create demands for new or expanded parks and recreation facilities and as proposed, will not comply with the City's proposed standard of 3 acres of parkland per 1,000 population.

METHODOLOGY

The analysis of park and recreation impacts are based upon review of the proposed General Plan Update.

PROJECT IMPACTS

Approximately 215 acres have been designated as Park on the 1999 General Plan Land Use Diagram. This does not include any parkland which may be designated in the Southwest Atwater Specific Plan areas or the approximately 123 acres designated as Recreation. If all of the land currently designated as Park is developed with public park facilities in the future, and the buildout population of 68,528 persons is achieved, a standard of 3.13 acres of parkland per 1,000 population would be maintained. It is uncertain, however, whether the park lands provided would be configured in conformance with the recommendations of Table 4.10-5 above. However, it appears that the anticipated standard of 3.13 acres per 1,000 residents exceeds the standard that would be adopted by Policy LU-23.1 above. Therefore, the impact of implementation of the proposed General Plan on park and recreations is expected to be **less than significant**. No mitigation is necessary.

J. OTHER PUBLIC FACILITIES

1. EXISTING SETTING

GENERAL GOVERNMENT FACILITIES

Administration for the City is located in City Hall at 750 Bellevue Road. City Hall houses the public works, planning and building, and administrative services departments, as well as the City Manager and the City Clerk. City staff consists of 42 employees, excluding fire and police (Bettina McCoy, pers. comm.).

At this time there are no immediate plans to expand or modify the existing building. However, this may become necessary in the future, as the number of employees increases in conjunction with overall City growth.

LIBRARIES

There is one library within the City limits - the Atwater Branch of the Merced County Library, located on Third Street. This facility is part of the Merced County Library system. Service at the Atwater branch has been reduced in recent years due to budget cutbacks. A library loan program has been eliminated, and reference services have been reduced. The library relies on volunteers and a

support organization for services such as staff support and the purchase of books. However, the library does offer reading programs for children. Service in Spanish is also available. The building contains a meeting room that may be used by the public, but only to nonprofit groups. Near term improvements in library services and capabilities include a computer with Internet access and computerization of the Atwater branch's checkout process. Otherwise, there are no immediate plans for any major changes in library service at this time (Amanda Kelly, pers. comm.).

2. REGULATORY FRAMEWORK

RELEVANT GOALS AND POLICIES OF THE PROPOSED GENERAL PLAN UPDATE

General Government Facilities

GOAL LU-19. Facilitate the efficient provision of services to City residents by City administrative staff.

Policy LU-19.1. Expansion of City hall should be considered when the ratio of workers to general office floor space drops below 225 square feet per worker. General office floor area includes corridors, waiting areas and space for special equipment.

Policy LU-19.2. Determine the appropriateness and feasibility of developing satellite service centers for some City services.

Implementation Program LU-19.a. A committee comprised of at least three City staff members shall be appointed to periodically assess (every two years), the adequacy of the City's existing administration facilities and opportunities to increase efficiency and/or the level of service provided to the citizens of Atwater. The findings of the Committee's review, any specific recommendations, and potential sources of funding shall be forwarded to the City Council for consideration.

Libraries

GOAL LU-22. Promote the maintenance and enhancement of library services and facilities that are available to the community.

Policy LU-22.1. Encourage the efforts of the Merced County Library to continue to improve the quality and availability of library resources and services offered at the Atwater Branch facility.

STANDARDS OF SIGNIFICANCE

Project impacts are considered significant if the project results in the following:

- 1) The project will create demands for general public services in excess of the City's ability to provide those services.

METHODOLOGY

The analysis of impacts to general public facilities and libraries is based upon review of the proposed General Plan Update.

PROJECT IMPACTS

Impact 4.10-7 Implementation of the proposed General Plan Update would create demands for general public services in excess of the City's ability to provide those services. This is considered a **significant** impact.

Mitigation

The following provisions of the proposed General Plan Update substantially reduce **Impact 4.10-7: LU-19, LU-19.1, LU-19.a, LU-22 and LU-22.1.**

Significance After Mitigation

Implementation of the above would mitigate impacts to general government facilities and libraries schools to **less than significant** by conducting ongoing monitoring of facility and service needs.

5.1.1 Project and Alternatives

The EIS is designed to help decision-makers understand project goals, objectives and potential impacts of proposed actions. The EIS also helps decision-makers understand the project's benefits, which include economic, social and environmental. The project is designed to provide a range of benefits to the community, including improved access to services, improved safety and security, and improved quality of life. The project is also designed to provide a range of benefits to the environment, including improved water quality, improved air quality, and improved wildlife habitat.

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5.0 ALTERNATIVES TO THE PROJECT

The project is designed to provide a range of benefits to the community, including improved access to services, improved safety and security, and improved quality of life. The project is also designed to provide a range of benefits to the environment, including improved water quality, improved air quality, and improved wildlife habitat. The project is designed to provide a range of benefits to the community, including improved access to services, improved safety and security, and improved quality of life. The project is also designed to provide a range of benefits to the environment, including improved water quality, improved air quality, and improved wildlife habitat.

5.1.2 Project Description

5.1.2.1 Project Description

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5.1 PURPOSE AND METHODOLOGY

The CEQA Guidelines state that alternatives to the proposed project should describe and analyze a reasonable range of alternatives. The EIR should consider alternatives which would feasibly attain most of the basic objectives of the project but avoid or substantially lessen any of the significant environmental effects of the project. The purpose of this process is to provide decision makers and the public with a discussion of environmentally sensitive options, and to document that other options were considered within the review process (CEQA Guidelines, Section 15126 [d]).

To that effect, this section identifies and examines four alternatives to the proposed project, the "No Project" alternative (maintain the 1992 General Plan land use designations), the MCAG Population Projection Scenario alternative, the South Atwater Low and Medium Density Residential Scenario alternative, and the Castle Open space Scenario alternative. Environmental impacts associated with each of these alternatives are compared with those resulting from implementation of the Preferred Land Use Alternative, and are summarized at the conclusion of this section. This summary also includes the identification of the "environmentally superior" alternative.

5.2 DEVELOPMENT OF THE ALTERNATIVES

As noted in Section 3.0, the General Plan process included the identification and evaluation of land use alternatives. Different land use scenarios offered alternative views of the future development of the City, and assisted the community and its decision-makers in choosing the most desired type of future development. During the initial stage of the General Plan update process, a number of potential growth scenarios were developed that covered various portions of the Planning Area. Through community visioning and planning workshops, the City developed a Preferred Alternative for its updated General Plan. The Preferred Alternative is a composite of various portions of the scenarios identified in Section 3.0. Aside from the No Project alternative, the alternatives developed for this analysis represent the scenarios not chosen for the Preferred Alternative composite.

5.3 ALTERNATIVES

ALTERNATIVE 1 - NO PROJECT

Description

CEQA requires one alternative be a "no project alternative" describing the program preceding the project. Consequently, this alternative considers the environmental impacts of the proposed project compared with build-out of the existing General Plan land use diagram. This scenario assumes continued growth within the City consistent with accepted growth projections and existing allowable uses.

Comparative Analysis - No Project versus Preferred Alternative

Land Use Considerations / Conversion of Agricultural Land and Open Space

Under this alternative, no land use designation changes would be imposed, and as such, current land use patterns allowed under the 1992 General Plan would remain. In comparison to the Preferred Land Use alternative, the No Project Alternative allows for the development of approximately 18,316 acres while the Planning Area for the project includes an additional 10,230 acres. However, most of the net increase in acreage is within the City-designated Agricultural/Area of Interest category, which was not designated in the 1992 plan. The major changes from the 1992 plan involve a vast reduction in the acreage designated for very low residential development (9,033 acres in 1992 versus 3,033 acres in 2000), and the addition of approximately 370 acres of Low Density Residential, 308 and 320 acres of Business Park and Commercial, respectively, and the designation of 5,863 acres as Urban Reserve. Although the Preferred Alternative is greater in size geographically, the new land designations allow for additional Agricultural/Area of Interest and Urban Reserve land, which is not proposed for development. The Preferred Alternative concentrates growth activities within already developed areas, whereas the No Project Alternative allows for commercial and residential development in agricultural areas outside the urban core. The Preferred Alternative also represents a reduction in population by 18,347 from the 1992 Plan.

Human Health/ Risk of Upset

Human health impacts are generally considered to be site-specific, making it difficult to determine at the programmatic level the environmentally superior alternative. However, the No Project Alternative specifically allows for residential development on land currently utilized for agriculture, as well as residential development adjacent to the CAADC site, on which toxic substances are known to exist.

Traffic and Circulation

As identified in Section 4.3, buildout of the No Project Alternative would contribute to less of a decline in levels of services along SR 99, Winton Way, and Castle Parkway than would buildout under the Preferred Alternative.

Noise

As permanent increases in noise levels are generally associated with increases in traffic congestion, it can be deducted that the No Project alternative would result in less of an increase in noise levels than would the Preferred Alternative.

Air Quality

As increases in air pollution levels are generally associated with increases in traffic congestion, it can be deducted that the No Project alternative would result in less of an impact to air quality than would the Preferred Alternative.

Geology, Soils and Seismicity

Because the land use designation layout of both plans does not differ significantly in terms of intensity of development in any particular area, the alternatives would have similar impacts in terms of geology.

Surface Hydrology, Groundwater and Water Quality

Because the No Project Alternative proposes less business and commercial development than does the Preferred Alternative, it can be assumed that there would be less runoff under the No Project scenario, and therefore less of an impact to drainage patterns and water quality.

Biology and Natural Resources

Because the No Project Alternative proposes a less concentrated development pattern and does not include Agricultural/Area of Interest or Urban Reserve designations, it is likely that development under this scenario could lead to a greater decline in habitat and open space than would the Preferred Alternative.

Cultural Resources

Impacts to cultural and historic resources would be expected to be greater under the No Project Alternative than with the Preferred Alternative because of the potential for development of a greater area of land outside of the urban core.

Public Services and Utilities

The proposed project would not, in and of itself, create additional demands upon water supply and distribution services, wastewater treatment, utilities (such as electricity, gas and telephone) and public services (such as police, fire, solid waste disposal, schools and parks) that can not be mitigated. Compared to the Preferred Alternative, the No Project Alternative would likely place a greater burden on public services because it proposes a larger population at buildout.

ALTERNATIVE 2 - CASTLE OPEN SPACE SCENARIO

Description

In general, the Castle Open Space Scenario does not propose to increase overall acreage, and development patterns are generally less intensive than under the Preferred Alternative. A combination of Very Low Density Residential and Urban Reserve designations are applied to minimize development densities around the CAADC site. The remainder of the area is designated similar to the 1992 plan.

Comparative Analysis -Castle Open Space Scenario versus Preferred Alternative

Land Use Considerations /Conversion of Agricultural Land and Open Space

Differences between the two alternatives include the addition of Very Low and Low Density Residential, business park and commercial land, and agricultural or urban reserve. As with the No Project Scenario, the Preferred Alternative is greater in size geographically, but the new land designations allow for additional Agricultural/Area of Interest and Urban Reserve land, which is not proposed for development. The Preferred Alternative concentrates growth activities within already developed areas, where as the No Project Alternative allows for commercial and residential development in agricultural areas outside the urban core, and consequently a less orderly development pattern.

Human Health/ Risk of Upset

Human health impacts are generally considered to be site-specific, making it difficult to determine at the programmatic level the environmentally superior alternative. However, the Castle Open Space specifically allows for residential development on land currently utilized for agriculture, as well as residential development adjacent to the CAADC site, on which toxic substances are known to exist.

Traffic and Circulation

Buildout of Alternative 2 would contribute to less of a decline in levels of services along SR 99, Winton Way, and Castle Parkway than would buildout under the Preferred Alternative.

Noise

As permanent increases in noise levels are generally associated with increases in traffic congestion, it can be deducted that the Castle Open Space alternative would result in less of an increase in noise levels than would the Preferred Alternative.

Air Quality

As increases in air pollution levels are generally associated with increases in traffic congestion, it can be deducted that the Castle Open Space alternative would result in less of an impact to air quality than would the Preferred Alternative.

Geology, Soils and Seismicity

Because the Castle Open Space Plan proposes less intensive development, it would likely result in reduced grading and other geologic disturbance.

Surface Hydrology, Groundwater and Water Quality

Because the Castle Open Space alternative proposes less business and commercial development than does the Preferred Alternative, it can be assumed that there would be less runoff under the Castle Open Space scenario, and therefore less of an impact to drainage patterns and water quality.

Biology and Natural Resources

Because the Castle Open Space alternative proposes a less concentrated development pattern and does not include Agricultural/Area of Interest or Urban Reserve designations, it is likely that development under this scenario could lead to a greater decline in habitat and open space than would the Preferred Alternative.

Cultural Resources

Impacts to cultural and historic resources would be expected to be greater under the Castle Open Space alternative than with the Preferred Alternative because of the potential for development of a greater area of land outside of the urban core.

Public Services and Utilities

Neither this alternative or the proposed project would, in and of themselves, create additional demands upon water supply and distribution services, wastewater treatment, utilities (such as electricity, gas and telephone) and public services (such as police, fire, solid waste disposal, schools and parks) that can not be mitigated. Population was not extrapolated from the Castle Open Space Scenario. However, the development pattern suggests less concentrated development, thereby likely to require the extension of services beyond that anticipated by the Preferred Alternative.

ALTERNATIVE 3 – MCAG POPULATION PROJECTION SCENARIO

Description

This scenario proposes minor land use modifications, based upon population projections prepared by the Merced County Association of Governments (MCAG). Development patterns and intensities do not differ significantly from the No Project scenario.

Comparative Analysis -MCAG Population projection versus Preferred Alternative

Land Use Considerations /Conversion of Agricultural Land and Open Space

Under this alternative, very few land use designation changes would be imposed, and as such, land use patterns would be very similar to the 1992 General Plan. In comparison to the Preferred Land Use alternative, the MCAG Alternative allows for the development of approximately 18,316 acres while the Planning Area for the project includes an additional 10,230 acres. However, most of the net increase in acreage is within the City-designated Agricultural/Area of Interest category, which was not designated in the 1992 plan. The Preferred Alternative concentrates growth activities within already developed areas, where as the MCAG Alternative allows for commercial and residential development in agricultural areas outside the urban core.

Human Health/ Risk of Upset

Human health impacts are generally considered to be site-specific, making it difficult to determine at the programmatic level the environmentally superior alternative. In addition, the MCAG Alternative specifically allows for residential development adjacent to the CAADC site, on which toxic substances are known to exist.

Traffic and Circulation

As identified in Section 4.3, buildout of the MCAG Alternative would contribute to less of a decline in levels of services along SR 99, Winton Way, and Castle Parkway than would buildout under the Preferred Alternative.

Noise

As permanent increases in noise levels are generally associated with increases in traffic congestion, it can be deducted that the MCAG alternative would result in less of an increase in noise levels than would the Preferred Alternative.

Air Quality

As increases in air pollution levels are generally associated with increases in traffic congestion, it can be deducted that the MCAG alternative would result in less of an impact to air quality than would the Preferred Alternative.

Geology, Soils and Seismicity

Because the land use designation layout of the MCAG scenario does not differ significantly from the 1992 Plan in terms of intensity of development in any particular area, the alternatives would have similar impacts in terms of geology.

Surface Hydrology, Groundwater and Water Quality

Because the MCAG Alternative proposes less business and commercial development than does the Preferred Alternative, it can be assumed that there would be less runoff under the MCAG scenario, and therefore less of an impact to drainage patterns and water quality.

Biology and Natural Resources

Because the MCAG Alternative proposes a less concentrated development pattern and does not include Agricultural/Area of Interest or Urban Reserve designations, it is likely that development under this scenario could lead to a greater decline in habitat and open space than would the Preferred Alternative.

Cultural Resources

Impacts to cultural and historic resources would be expected to be greater under the MCAG Alternative than with the Preferred Alternative because of the potential for development of a greater area of land outside of the urban core.

Public Services and Utilities

Compared to the Preferred Alternative, the MCAG Alternative would likely place a greater burden on public services because it would likely support a larger population at buildout.

ALTERNATIVE 4 – LOW AND MEDIUM DENSITY RESIDENTIAL SCENARIO

Description

This scenario adds a considerable amount of Low and Medium density residential land uses in a fairly compact pattern to the south portion of the Planning Area. The remaining land use patterns are similar to the No Project Alternative.

Comparative Analysis -Low and Medium Density Residential Scenario versus Preferred Alternative

Land Use Considerations /Conversion of Agricultural Land and Open Space

The Low and Medium Density Scenario proposes residential development in areas protected by the Preferred Alternative's Agricultural/Area of Interest or Urban Reserve designation. Although existing land use patterns include residential for these areas, the Low and Medium Density (versus the existing Very Low Density or the designations proposed by the project) increases the potential for land use conflicts by reducing the area for potential mitigation with buffers or setbacks.

Human Health/ Risk of Upset

Human health impacts are generally considered to be site-specific, making it difficult to determine at the programmatic level the environmentally superior alternative. However, the more intensive development of land that has been utilized for agriculture, as proposed by the Low and Medium scenario, presents a greater opportunity exposure to contaminated soil or water.

Traffic and Circulation

Buildout of Alternative 4 would contribute to less of a decline in levels of service along Winton Way, than would buildout under the Preferred Alternative, but the impact on other roads would be similar to the Preferred Alternative.

Noise

As permanent increases in noise levels are generally associated with increases in traffic congestion, it can be deducted that Alternative 4 would result in a similar increases in noise levels as would the Preferred Alternative.

Air Quality

As increases in air pollution levels are generally associated with increases in traffic congestion, it can be deducted that Alternative 4 would result in a similar impacts to air quality as would the Preferred Alternative.

Geology, Soils and Seismicity

Because Alternative 4 proposes more intensive development in areas that are not currently developed, it would likely require additional grading or other geologic disturbance.

Surface Hydrology, Groundwater and Water Quality

Because the low and Medium Density Residential alternative proposes less business and commercial development than does the Preferred Alternative, it can be assumed that there would be less runoff under this alternative, and therefore less of an impact to drainage patterns and water quality.

Biology and Natural Resources

Because the Alternative 4 proposes a less concentrated development pattern and does not include Agricultural/Area of Interest or Urban Reserve designations, it is likely that development under this scenario could lead to a greater decline in habitat and open space than would the Preferred Alternative.

Cultural Resources

Impacts to cultural and historic resources would be expected to be greater under Alternative 4 than with the Preferred Alternative because of the potential for development of a greater area of land outside of the urban core.

Public Services and Utilities

Neither this alternative or the proposed project would, in and of themselves, create additional demands upon water supply and distribution services, wastewater treatment, utilities (such as electricity, gas and telephone) and public services (such as police, fire, solid waste disposal, schools and parks) that can not be mitigated. Compared to the Preferred Alternative, Alternative 4 would likely place a greater burden on public services because it proposes a larger population at buildout.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Of the five scenarios addressed by this EIR, the Preferred Alternative represents the environmentally superior alternative. A summary matrix is provided below, which compares each alternative to the proposed project.

TABLE 5-1
SUMMARY OF PROJECT ALTERNATIVES COMPARISON ANALYSIS

Alternative	Land Use	Risk of Upset	Traffic	Noise	Air Quality	Geology	Hydrology	Biology	Cultural	Pub. Serv.
Alternative 1 – No Project	W	W	B	B	B	S	W	W	W	W
Alternative 2 – Castle Open Space	W	W	B	B	B	B	B	W	W	W
Alternative 3 – MCAG Population	W	W	B	B	B	S	B	W	W	W
Alternative 4 – Medium and Low Density	W	W	S	S	S	W	B	W	W	W

B – Better
S – Same
W – Worse

Based on the matrix presented above, it can be concluded that the Preferred Alternative is environmentally superior to Alternatives 1, 3 and 4, and comparable to the Castle Open Space Alternative.

Although the Castle Open Space would appear to have fewer impacts than the Preferred in terms of traffic, noise, air quality, geology, and hydrology, it is likely to have greater impacts in terms of land use, risk of upset, biology, cultural resources and public services. In addition, this alternative does not meet the project objectives, including the establishment of orderly land use development patterns, the defining of the economic and social goals, and the coordination of community and environmental protection activities.

The MCAG Population alternative represents the third-most superior alternative. While this alternative would likely have fewer traffic, air, noise and hydrologic impacts. However, this alternative would have additional impacts in terms of land use, risk of upset biology, cultural resources and public services.

The Low and Medium Density Alternative ranks fourth among the alternatives (and fifth overall) in terms of environmental superiority.

6.0 CUMULATIVE IMPACTS

The purpose of this section is to identify and describe the cumulative impacts of the proposed project in relation to the existing conditions and the impacts of other projects in the area. The purpose of this section is to identify and describe the cumulative impacts of the proposed project in relation to the existing conditions and the impacts of other projects in the area.

The cumulative impacts of the proposed project are expected to be significant and adverse. The cumulative impacts of the proposed project are expected to be significant and adverse. The cumulative impacts of the proposed project are expected to be significant and adverse.

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6.0 CUMULATIVE IMPACTS

6.1 Cumulative Impacts of the Project

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6.2 Cumulative Impacts of the Project

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6.1 ANALYSIS METHODOLOGY

CEQA requires that cumulative impacts be discussed when they are significant. To provide an adequate discussion of cumulative impacts, CEQA provides two options, or methods, by which to analyze a project's effects:

- 1) An EIR may either provide a list of past, present and reasonably anticipated future projects which, when combined, could result in a significant impact more severe than the project alone; or
- 2) An EIR may provide a summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or area wide conditions.

For the purposes of this EIR, the second method has been employed, because of the programmatic nature of the project. In this particular case, the long-term build out of the proposed land uses within Merced County represents the cumulative setting. As noted throughout this report, Atwater is surrounded by agricultural land. However, it is also surrounded by regions that are experiencing significant growth. For instance, growth is expected in and around the City of Merced. The results of the *PMC Market Study* have been utilized as the baseline assumption for regional cumulative growth. Accordingly, the Atwater General Plan recognizes that employee-generating land uses create regional opportunities to balance residential development within the City and surrounding communities.

6.2 CUMULATIVE IMPACT ANALYSIS

When analyzing the potential environmental effects of the plan in a regional context, many of the impacts identified are also cumulative in nature because they are caused by long-term implementation of the General Plan's land use designations. Under this premise, significant cumulative impacts are identified throughout the body of the EIR analysis and mitigated by the policies, implementation programs and mitigation measures identified within that section, where mitigation is feasible. The following summary, however, is intended to further focus the discussion of significant cumulative effects:

LAND USE

The land use impacts identified in section 4.1 address land use compatibility issues and land use consistency with other governing programs and policies. The impacts identified are specific to the physical arrangement of land uses within the Planning Area and do not represent a significant effect within the region. The land use programs are located in areas of relative isolation; that is, there are no other proposed developments considered close enough to contribute to a cumulative disruption or division of regional land use.

Other cumulative land use impacts, however, are more directly related to the implementation of the General Plan. The conversion of agricultural land, for instance, has been identified as a significant and unavoidable impact of implementation of the General Plan, as described in Section 4.1. This impact clearly represents the cumulative effect of long-term growth in the Planning Area under the proposed land use changes. In a wider context, this impact also reflects a regional and state-wide trend of declining agricultural acreage.

HUMAN HEALTH/RISK OF UPSET

Human health/risk of upset impacts are site-specific and generally not affected by cumulative development in the region. As described in Section 4.2, implementation of the General Plan Update would not contribute to an increase in the potential for soil or groundwater contamination or the potential risk of upset as a result of current or past land use. Therefore, the project itself does not contribute to health-related impacts that would cumulatively affect the region.

TRAFFIC AND CIRCULATION

The flow of traffic in the long-term is a result of cumulative growth in the region. The 2020 scenario under the preferred alternative is a result of planned regional growth, to which individual projects will contribute over time. Although this could represent a cumulative impact, the facility improvements and other mitigation provided within Section 4.3 effectively mitigate the impacts of increased traffic, and therefore mitigate cumulative impacts as well.

NOISE

Traffic noise sources over time are the cumulative or combined effect of future development. As discussed within section 4.4, however, land uses can be planned to effectively mitigate anticipated cumulative impacts.

AIR QUALITY

Regional air quality is a cumulative effect of long-term regional growth. This impact has been identified within Section 4.5 as significant and unavoidable. Because of a significant amount of pollutant transport from outside the Atwater Planning Area, this regional problem will require close coordination with surrounding agencies and air districts, as well as monitoring efforts to ensure upwind pollutants are being reduced in accordance with state guidelines.

SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY

Drainage, water quality and flooding impacts are all identified as significant within Section 4.6. these significant impacts are also cumulative in nature, as each impact is accentuated by regional growth

over time. Individual development projects within planned land uses may not appear to contribute much to drainage and flooding problems. However, when viewed in terms of land use build out and in relationship to other projects, these small contributions result in a larger cumulative effect. Drainage waters displaced in one area will be transferred to points downstream, resulting in a regional impact requiring multi-agency strategies and coordination. Cumulative growth also exposes a larger number of people to flood hazards as development occurs within inundation areas, and because development itself effects natural drainage patterns. The flood control policies and implementation programs identified within the General Plan, as well as mitigation identified within Section 4.6 of this EIR address this cumulative effect by requiring drainage facilities and flood prevention measures.

GEOLOGY AND SOILS

Impacts under this topic are generally related to geologic hazards, resource access and erosion issues. The long term implementation of the plan and regional population growth will not dramatically affect the region's geologic resources or expose a large number of people to specific hazards due to relatively low seismic risk and conservative population figures generated by the General Plan. Erosion, particularly the loss of topsoil, does represent a cumulative effect when the project is considered in addition to other regional growth. The project's contribution to this potential impact, however, can be mitigated by the erosion control measures identified in sections 4.6 and 4.7. Cumulative loss of prime agricultural soils is significant, however, as discussed above.

BIOLOGICAL AND NATURAL RESOURCES

The land uses of the general Plan, combined with other regional growth, has the potential to result in further fragmentation of significant biological habitat. As discussed in Section 4.8, these impacts are the cumulative effect of regional growth over time. These impacts are effectively mitigated by the provisions of the General Plan that require additional biological review as a means of minimizing impacts to sensitive habitat, thereby reducing the fragmentation of habitat.

CULTURAL RESOURCES

As discussed in section 4.9, Atwater contains a limited number of historic resources, and an unknown number of archaeological or paleontological resources. Resources can be mitigated individually as they are discovered, and may be and may be avoided by project design at the time of development. However, even when this is accomplished, the resource may still suffer the loss of its context (i.e., the original landscape in which these sites were used would be substantially altered. However, the potential cumulative effect of losing resources in their context is not considered significant, because much of the Planning Area has already been disturbed by agricultural activities.

PUBLIC SERVICES AND UTILITIES

The impact on the City's public services is a direct result of cumulative development. However, such increases in demand for services can generally be quantified and mitigated as development occurs. One area of potential cumulative impact is water supply. As discussed in section 4.10, however, Atwater relies on groundwater resources that are not currently being utilized by other agencies. Since supply is ample to serve build out of the General Plan, cumulative impacts are not expected to be significant.

7.0 LONG TERM IMPLICATIONS OF THE PROJECT

7.0.1 Introduction

This section discusses the potential long-term implications of the project, including the effects on the environment, the economy, and the community. The project is expected to have both positive and negative impacts. The positive impacts include the creation of new jobs, the development of new infrastructure, and the improvement of the local economy. The negative impacts include the loss of natural resources, the increase in traffic, and the potential for environmental degradation. The project is expected to have a net positive impact on the community, but the negative impacts must be carefully managed to ensure that the project is sustainable in the long term.

7.0.2 Environmental Impacts

7.0 LONG TERM IMPLICATIONS OF THE PROJECT

7.0.1 Introduction

The project is expected to have both positive and negative impacts on the environment. The positive impacts include the creation of new jobs, the development of new infrastructure, and the improvement of the local economy. The negative impacts include the loss of natural resources, the increase in traffic, and the potential for environmental degradation. The project is expected to have a net positive impact on the community, but the negative impacts must be carefully managed to ensure that the project is sustainable in the long term.

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7.0 LONG-TERM IMPLICATIONS OF THE PROJECT

7.1 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

OVERVIEW

This section discusses the relationship between the short term uses of resources, such as land use for development purposes, versus the long term benefits of not developing a project and leaving the land in agricultural production or open space. The relationship between short term productivity is often one of trade-offs, or of balancing social, economic, environmental and similar concerns over time. In some instances, a relatively short term benefit may have adverse cumulative effects, with the possibility that future generations and future economies may be burdened with unwarranted social or environmental costs. The opposite situation, in which long-term benefits occur at the expense of short-term impacts, is also possible. Decisions that influence the balancing of such impacts for this project are the responsibility of the City of Atwater, to be monitored over time as the General Plan is implemented.

ANALYSIS

The “short term” use of the areas proposed for urban development, versus keeping the land in long-term agricultural production, represents a policy decision by the City to generate employment, revenue growth and compatible housing in focused growth areas. It will remain the City’s responsibility to review future development applications within these areas to ensure that the physical change in land use meets the standards of quality and policy intent of the General Plan.

Development of the proposed land uses for industrial, commercial, residential and other purposes is, in terms of physical lifespan, a short-term use of the environment. As a result, impacts such as the loss of agricultural land and the loss of wildlife habitat may narrow the range of long term beneficial uses which have in part supported the City and defined its character.

Implementation of the General Plan represents a long-term commitment to urbanization in specific areas of the Planning Area, since it is unlikely that the land would revert back to open space or agriculture. It is logical to assume that the various components of the project will gradually be replaced by other productive urban activities as redevelopment of the land occurs in response to future human needs.

The advantages of near-term project development include greater economic productivity and diversity from the land, as well as an increased revenue base for the City. The near-term benefits of utilizing the environment must be weighed against long-term productive uses, such as agriculture and habitat values. The long-term commitment of social services and public maintenance of facilities would also be required, establishing an increased demand for such services throughout the “life” of urban uses.

7.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES AND IRRETRIEVABLE COMMITMENT OF RESOURCES

OVERVIEW

CEQA requires the discussion of irreversible changes which may result from a project (CEQA Guidelines Section 15126[f]). Irreversible changes include the use of nonrenewable resources, the commitment of future generations to similar uses, and the irreversible physical changes to the project area.

ANALYSIS

Implementation of the project would result in several irreversible changes, including the loss of agricultural land (Section 4.1), commitment of energy resources, and increases in air pollutants (Section 4.5). Development of the General Plan to support urban uses may be regarded as a permanent and irreversible change from agricultural uses, and will eliminate a small percentage of Merced County's active agricultural land. Other irreversible changes include changes to drainage patterns (Section 4.6) and the visual character of specific portions of the Planning Area. As identified throughout the body of this EIR, these changes do not necessarily reflect a significant environmental impact.

An increase in the intensity of land use will result in an increase in regional energy consumption. Fossil fuels are the principal source of energy and the project will increase consumption of available supplies of petroleum products. These energy resource demands relate to initial project construction, lighting, heating and cooling of buildings, and the transport of people and goods. Construction of the project will require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, and asphalt and metals.

7.3 GROWTH-INDUCING IMPACTS

OVERVIEW

CEQA requires all EIRs to discuss the growth-inducing impacts of proposed projects. The discussion is intended to identify the ways in which the project could "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment"(CEQA Guidelines Section 15126 [g]).

A project could induce growth by lowering or removing barriers to growth, or by creating an amenity that attracts new population or economic activity. The growth inducing potential of a project would generally be considered to have a significant impact if the project either induced growth or created

the capacity for growth above and beyond levels permitted by existing public planning policies. The extension of urban services to previously unserved areas or the introduction of a major facility such as a sewer treatment plant, for example, can be growth inducing factors.

ANALYSIS

The growth-inducing potential of the proposed General Plan land uses can be discussed in terms of the plan's focus area. For example, the potential growth within the Planning Area represents a logical extension of urban services to an existing community. These proposed uses therefore induce growth only if infrastructure is provided for capacities above and beyond what is required for the General Plan. In the absence of such facilities, the Atwater area will grow only as steadily as such services (and market conditions) will provide.

Because the preferred land use alternative allows for less of a gain in population than does the 1992 land use diagram, the project could be considered less growth inducing than the existing setting. However, the new and/or more intensive non-residential land use designations may be growth inducing. Considering that these uses are job-producing, rather than residential, commuters would be traveling from adjacent residential communities. As a result, growth pressure may be experienced in surrounding areas to shorten commute times, for instance.

8.0 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

8.1 OVERVIEW

The environmental analysis within this EIR has been conducted at the “program” level, which acknowledges that additional site-specific environmental review will be necessary, at some level, prior to approval of actual development plans. At this level of analysis, however, the following Significant Unavoidable Impacts have been identified based upon the credible worst-case scenario of land use buildout. The following impacts are also identified within the body of the EIR analysis, and have been separated in this section for summary purposes.

8.2 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

AGRICULTURAL LAND CONVERSION

Implementation of the proposed General Plan land uses will result in conversion of important agricultural lands. As discussed within Section 4.1 and Section 6.0, this impact is significant, cumulative and unavoidable. There is no mitigation feasible to offset this loss other than reducing the total acreage proposed for urban use. The implications of this loss go beyond the boundaries of the Planning Area. Although the conversion of land within the study area is relatively small in terms of a percentage of total acreage lost state-wide, the General Plan does contribute to this trend. Notwithstanding this loss, the City is proposing a measured amount on non-agricultural uses to further diversify the City’s future economic base.

AIR QUALITY

As discussed in Section 4.5, the City of Atwater’s pollutant levels are primarily the result of ambient transport from other areas. The land uses of the General Plan, as proposed, would generate significant emissions from automobile traffic. These emissions, combined with existing regional conditions and pollutant transport, would exceed acceptable minimum thresholds for significance. Although certain site-specific mitigation measures can be employed, air quality impacts cannot be fully mitigated.

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9.1.3. 1972x 1973 2000 Supplement 1.2

9.0 REPORT PREPARERS AND REFERENCES

9.1. 1972x 1973

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San Diego: 1972x 1973	San Diego: 1972x 1973

9.1.3. 1972x 1973 2000 Supplement 1.2

9.1.4. 1972x 1973

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INTERVIEWS AND CORRESPONDENCE

John Clinkenbeard, Division of Mines and Geology. Telephone interviews, July 31, 1998; April 3, 2000.

Patrick Faretta, Recreation Superintendent, City of Atwater. Letter, August 26, 1998.

Gayle Janz, Atwater Police Department. Telephone interview, August 20, 1998.

Amanda Kelly, Merced County Library, Atwater Branch. Telephone interview, August 5, 1998.

Jerry Lawrie, Solid Waste Division, Merced County Public Works Department. Telephone interview, July 8, 1998.

Ned Miller, CEO, Bloss Memorial Healthcare District Hospital. Telephone interview, August 3, 1998.

Preston, Robert, Botanist, Jones & Stokes Associates Inc., Sacramento, Calif. Telephone conversation, 1998.

L. Simmons, El Paso Energy. Electronic mail, August 12, 1998.

Dennis Sparks, Fire Chief, Atwater Fire Department. Telephone interview, August 20, 1998.

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APPENDIX A

NOTICE OF PREPARATION AND INITIAL STUDY



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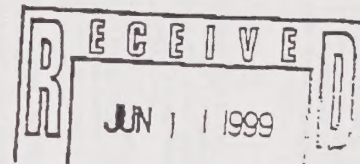
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Loretta Lynch
DIRECTOR

Notice of Preparation

June 7, 1999



To: Reviewing Agencies

Re: Comprehensive Revision and Adoption of the City of Atwater General Plan
SCH# 99061027

Attached for your review and comment is the Notice of Preparation (NOP) for the Comprehensive Revision and Adoption of the City of Atwater General Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency notice. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Mo Khatami
City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Mosie Boyd
Project Analyst, State Clearinghouse

Attachments

cc: Lead Agency

NOP Distribution List

S = sent by lead agency
X = sent by SCH

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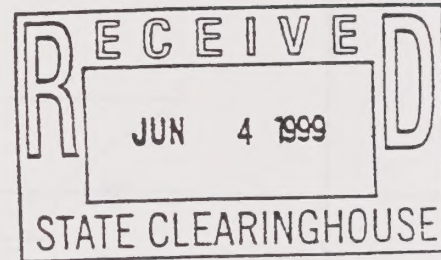
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NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

TO: State Clearinghouse
Responsible Agencies
Trustee Agencies
Interested Parties



LEAD AGENCY: City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301
(209) 357-6340 FAX: (209) 357-6363

CONTACT: Mo Khatami, Planning and Redevelopment Manager

The City of Atwater will be the Lead Agency for the preparation of an Environmental Impact Report (EIR) for the project identified below. The City is requesting comments from interested persons and agencies as to the scope and content of the environmental information that should be included in the EIR. Agencies should submit comments that are germane to their statutory responsibilities as they are related to the proposed project, as they may need to use the EIR prepared by the City when considering any permits or other approvals related to the project.

The project location, description and a summary of potential environmental impacts are contained in the attached materials. Copies of the Initial Study are available from the City upon request. Due to time limits mandated by State law, responses must be forwarded at the earliest possible date, but no later than thirty (30) days from the issue date shown at the bottom of this notice. Please send written responses, along with the name of a contact person, to Mo Khatami at the address above.

Project Title: Comprehensive Revision and Adoption of the City of Atwater General Plan

Project Location: The General Plan Study Area encompasses approximately 44.6 square miles. It includes land within the Atwater City Limits, unincorporated land within the City's Sphere of Influence, and other unincorporated areas. The general boundaries of the Study Area are State Highway 140 to the south, State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, and Stein Road and Bert Crane Road to the west. (See attached map of Preferred Alternative)

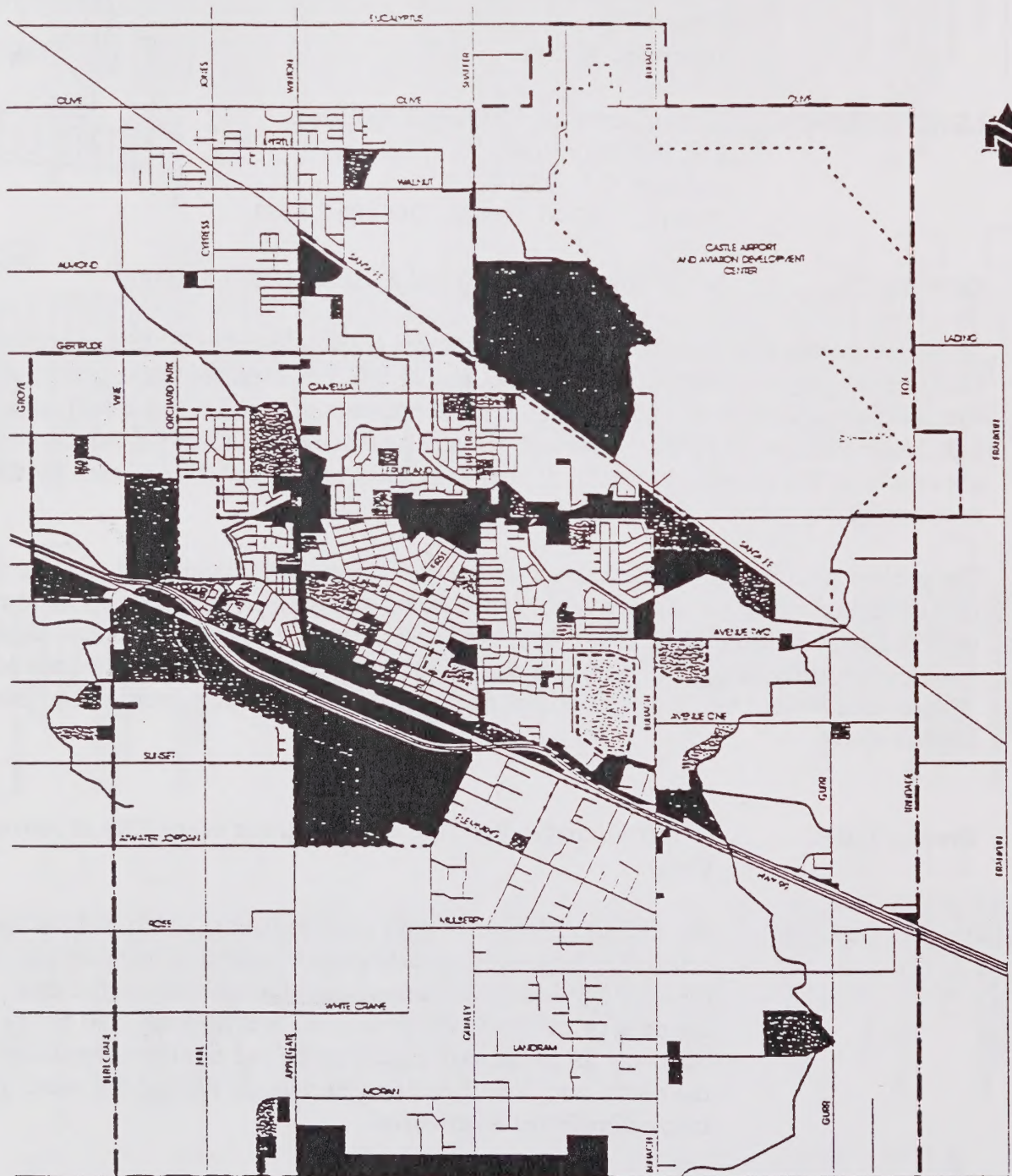
Project Description: See attached materials.

ISSUE DATE: June 4, 1999

SIGNATURE: Mo Khatami
Mo Khatami
Planning and Redevelopment Manager

ATWATER GENERAL PLAN

Land Use Designations (1992)

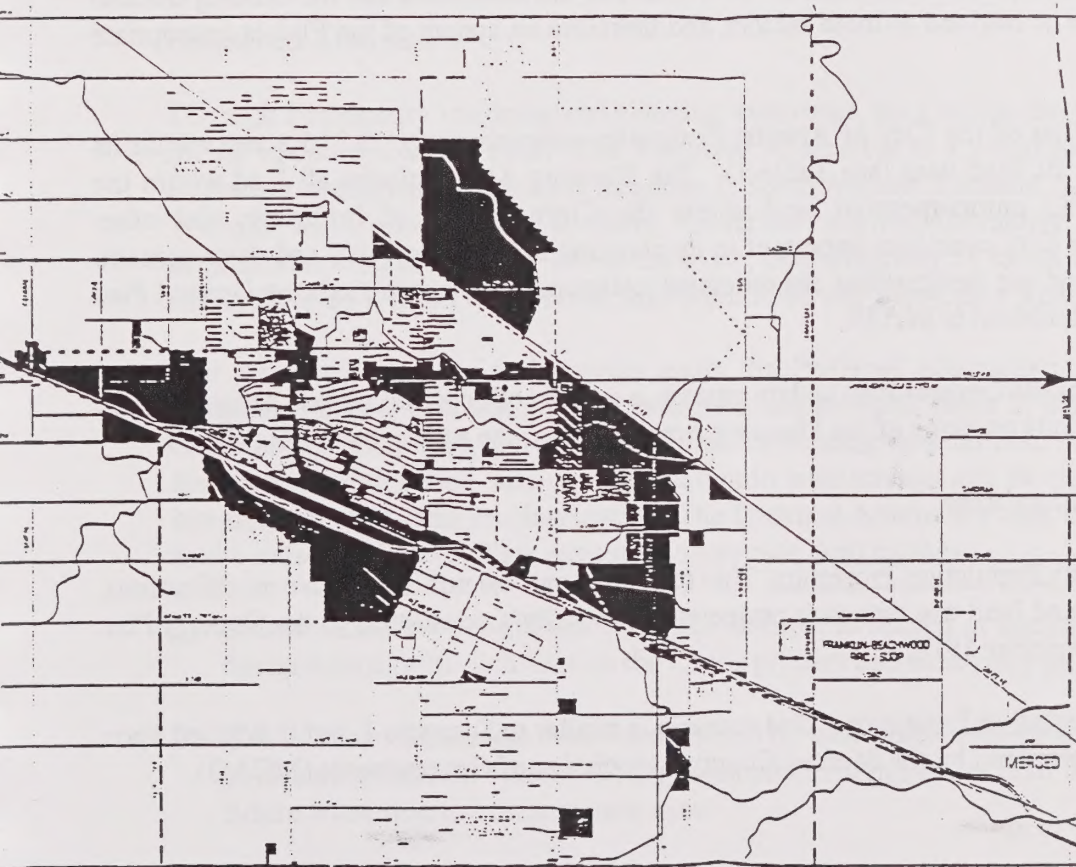


LEGEND:

- | | | | | |
|-------------------------------------|------------------------------|------------------------------|------------|---------------|
| - - - City Limits | Residential Transition | Manufacturing | Park | Institutional |
| - - - Parks | High Density Residential | Business Park | Recreation | School |
| - - - Saltwater of Influence (1984) | Medium Density Residential | Commercial | Path | |
| - - - General Plan | Low Density Residential | Commercial Transition | | |
| - - - Slurry Area Boundary | Very Low Density Residential | Castle Airport & Dev. Center | | |

ATWATER GENERAL PLAN

Preferred Land Use Alternative



LEGEND:

- City Limits
- Roads
- Proposed Castle Parkway
- Sphere of Influence (1984)
- Proposed Sphere of Influence
- General Plan Study Area Boundary
- Proposed Interchange
- Franklin-Beachwood RRC, SUDP
- Atwater RCC No. 1 (McSwain)
- Atwater RCC No. 2
- Downtown Residential Transition (Mixed Use)
- Residential Transition
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Manufacturing
- Business Park
- Commercial
- Commercial Transition
- Castle Aviation & Dev. Center
- Park
- Urban Reserve
- Urban Reserve Business Park
- Path
- Institutional
- School

PROJECT DESCRIPTION

The City of Atwater is initiating a comprehensive update of its General Plan. The most recent update of the City's General Plan took place in 1992, involving the Land Use, Circulation and Open Space/Conservation Elements. This occurred before the closure of Castle Air Force Base in 1995, which caused a decline in the City's population and its economic activity. The City is currently recovering, due in part to the conversion of the former base to civilian uses, which has been facilitated by a Reuse Plan prepared and adopted by the Castle Joint Powers Authority. Additionally, a new University of California campus north of the City of Merced is scheduled to open in the year 2005. Atwater will be connected to the UC campus through construction of a "university access system" that proposes the development of the Castle Parkway interchange and a four-lane expressway between State Highway 99 and Bellevue Road. Construction of a new interchange is also being planned at the intersection of State Highway 99, Central and Westside Roads. These projects are expected to have a significant influence on future growth and development in the Atwater area. The City has concluded that the existing General Plan does not anticipate or respond to these factors, and therefore an update of the Plan is appropriate at this time.

The existing General Plan of the City of Atwater designates approximately 18,316 acres within its Planning Area for specific land uses (see Table 1). The Planning Area includes all land within the Atwater City Limits, all unincorporated land within the City's Sphere of Influence, and other unincorporated land the City considers important in its planning for future growth and development. Based on acreage and land use designations, the estimated total population that the existing General Plan could accommodate at buildout is 86,139.

During the initial stage of the General Plan update process, a number of potential growth scenarios were developed covering various portions of the Planning Area. In brief, the scenarios are as follows:

City Limits and Surrounding Area

Scenario 1 - Market Study Population Projection. This scenario proposes minor land use modifications, based upon population and land use demands projected by the City's consultant in the General Plan Market Study dated November 1998.

Scenario 2 - MCAG Population Projection. This scenario is similar to Scenario 1, but it is based upon population projections prepared by the Merced County Association of Governments (MCAG).

South Atwater

Scenario 1 - Rural Residential. This scenario attempts to perpetuate existing rural residential development patterns in the area south of the current City limits and Sphere of Influence. An Urban Reserve designation is introduced, with small areas of Low Density Residential added near the current City limits.

Scenario 2 - Low and Medium Density Residential. This scenario adds a considerable amount of Low and Medium Density Residential land uses in the area in a fairly compact pattern.

Area Surrounding the Castle Airport and Aviation Development Center (CAADC)

Scenario 1 - Open Space. A combination of Very Low Density Residential and Urban Reserve designations are applied to minimize development densities around the CAADC site.

Scenario 2 - Business Park / Commercial Development. A combination of Business Park and Commercial designations has been applied to facilitate the capture of anticipated “spillover” development resulting from successful reuse of the CAADC site.

Westside and Castle Parkway Scenario - This scenario essentially expands the Planning Area boundaries to Highway 59 in the east and Stein Road in the west. Commercial and Residential development is proposed along the Castle Parkway corridor. Commercial and Business Park development opportunities have also been identified west of the existing City limits in anticipation of the State Highway 99/Central/Westside interchange.

Preferred Alternative

Through community visioning and planning workshops, the City has developed a Preferred Alternative for its updated General Plan. The Preferred Alternative is a composite of various portions of the following scenarios: City Limits Scenario 1, South Atwater Scenario 1, CAADC Scenario 2, and the Westside and Castle Parkway Scenario. Under the Preferred Alternative, the Planning Area boundaries in general are State Highway 140 to the south, State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, and Stein Road and Bert Crane Road to the west.

The proposed land use designations under the Preferred Alternative, along with the acreages and estimated number of dwelling units permitted, are shown in Table 1. Approximately 28,547 acres are designated, which is 10,231 acres more than the existing General Plan designates. Table 1 also shows the changes under each land use designation in total acreage and dwelling units per acre or building intensity for each land use designation. The Preferred Alternative uses the same land use designations as the existing General Plan, except for three new designations:

- 1) *Urban Reserve* - designation for areas intended to remain at current Merced County agricultural designations until such time as the City’s primary and secondary growth areas approach buildout.
- 2) *Urban Reserve/Business Park* - designation for areas surrounding the CAADC site that are intended to remain at current Merced County agricultural designations until development demands warrant future transition to business park uses.
- 3) *Downtown Residential Transition (Mixed Use)* - designation for areas in downtown Atwater where commercial and residential “mixed use” development will be encouraged.

It is estimated that the total population that can be accommodated at full buildout of the Preferred Alternative would be approximately 69,854, which is 16,285 less than the population at buildout under the existing General Plan.

The Preferred Alternative identifies the proposed expansion of the City’s existing Sphere of Influence; however, actual expansion of the Sphere will be pursued following adoption of the General Plan. It also

seeks to maintain buffers of open space or low-density development between the City of Atwater and adjacent communities, notably the community of Winton and the City of Merced. Established Rural Residential Centers (RRCs) within the Planning Area, including the Franklin/Beachwood RRC and the Atwater RRC Number 1 (the McSwain area), are recognized under the Preferred Alternative.

Potential Environmental Effects of the Project

Based upon preliminary research conducted by the City's project team, the General Plan update has been determined to have potentially significant environmental effects for the following issues:

- Agricultural Resources - potential conversion of prime farmland to urban uses; potential conflicts between adjacent residential and agricultural activities.
- Air Quality - potential increases in air pollutants that contribute to existing nonattainment of State and Federal air quality standards within the San Joaquin Valley Air Basin.
- Biological Resources - potential loss of habitat for special status plant and animal species; potential loss of vernal pools and other wetland areas.
- Cultural Resources - potential for incremental damage to archaeological resources.
- Geology and Soils – potential earthquake hazards; potential subsidence and wind erosion hazards.
- Hazardous Materials and Wastes - potential increase in the transportation, use and storage of hazardous materials, particularly in the vicinity of the former Castle Air Force Base.
- Hydrology and Water Quality - potential increase in demand on groundwater supplies; contamination of groundwater; potential development in floodplains.
- Land Use - potential inducement of urban development in previously undeveloped areas; impacts of new commercial development within the Planning Area on Downtown Atwater; compatibility of land uses with Castle Airport operations.
- Noise - potential increase in general noise levels, especially near major streets and roadways; exposure of noise sensitive land uses to transportation related and stationary noise sources; compatibility of land uses within Castle Airport noise contours.
- Public Services - potential need for new facilities and additional personnel to provide fire and police protection, primary and secondary education services, and park and recreation facilities/programs.
- Transportation - potential degradation of levels of service on streets and roadways; potential increased demand on public transit; impacts associated with construction of new or improved roadways.

- Utilities - potential need to improve and expand existing water and wastewater systems; potential additional demands on storm water drainage facilities; increased solid waste generation.
- Cumulative Impacts – potential contribution to cumulative adverse impacts on agricultural resources, air quality, biological resources, public services, traffic circulation and water supplies.

Table 1 – Comparison of Existing General Plan with Preferred Alternative for Updated General Plan

Land Use Category	1992 Land Use Diagram				Preferred Alternative					
	Average Du/Ac or FAR	Total Acreage	Total Du/Ac or Building Intensity	Estimated Residential Population	Total Acreage	Total Du/Ac or Building Intensity	Estimated Residential Population	Change in Total Acreage	Change in Total Du/Ac or Building Intensity	Change in Population
Residential Transition	0.30	52.00	679,536.00		50.50	659,934.00		-1.50	-19,602.00	
High Density Residential	25.00	120.50	3,012.50	9,038	124.30	3,107.50	9,323	3.80	95.00	285
Medium Density Residential	11.00	60.00	726.00	2,178	155.50	1,710.50	5,132	89.50	984.50	2,954
Low Density Residential	5.00	2,285.00	11,425.00	34,275	2,654.75	13,273.75	39,821	369.75	1,848.75	5,546
Very Low Density Residential	1.50	9,033.00	13,549.50	40,649	3,461.95	5,192.93	15,579	-5,571.05	-8,356.58	-25,070
Manufacturing	0.40	183.50	3,197,304.00		158.85	2,767,802.40		-24.65	-429,501.60	
Business Park	0.30	1,313.50	17,164,818.00		1,621.55	21,190,415.40		308.05	4,025,597.40	
Commercial	0.30	586.00	7,657,848.00		906.35	11,844,181.80		320.35	4,186,333.80	
Downtown (Mixed Use)	1.50	-	-		71.05	4,642,407.00		71.05	4,642,407.00	
Commercial Transition	0.25	5.35	58,261.50		5.35	58,261.50		0.00	0.00	
CAADC (See Detail on Separate Sheet)		2,494.00	4,550,896.15		2,494.00	4,550,896.15		0.00	0.00	
Park	0.05	242.50	528,165.00		214.65	467,507.70		-27.85	-60,657.30	
Recreation	0.05	123.00	267,894.00		123.00	267,894.00		0.00	0.00	
Urban Reserve (BP)		-	-		1,302.80	-		1,302.80	0.00	
Urban Reserve		-	-		14,121.30	-		14,121.30	0.00	
Franklin/Beachwood RRC		-	-		712.00	-		712.00	0.00	
Institutional	0.35	94.50	1,440,747.00		92.00	1,402,632.00		-2.50	-38,115.00	
School	0.35	274.00	4,177,404.00		277.30	4,227,715.80		3.30	50,311.80	
Path		-	-		-	-		0.00	0.00	
County "X"		1,443.50	-		-	-		-1,443.50	0.00	
Total		18,316.35		86,139	28,547.20		69,854	10,230.85		-16,285

NOTE: Factors used to calculate dwelling units per gross acre and/or building intensity in square feet for non-residential development (FAR) are based upon an "average" of the permitted density range for residential categories and a "typical FAR" rather than a maximum FAR for non-residential development. All figures have been calculated based upon gross acreage. Dwelling unit figures are in bold. In calculating population figures, a factor of 3.0 persons per dwelling unit was utilized.

CITY OF ATWATER

Planning Department

750 Bellevue Road, Atwater, CA 95301, PHONE (209) 357-6340

INTRODUCTION

This initial study has been prepared to identify and assess the anticipated environmental impacts of the proposed City of Atwater General Plan Update. The General Plan Study Area (Study Area) encompasses approximately 44.6 square miles. It includes land within the Atwater City Limits, unincorporated land within the City's Sphere of Influence, and other unincorporated areas. The general boundaries of the Study Area are State Highway 140 to the south, State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, and Stein Road and Bert Crane Road to the west.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.) CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before approving or implementing those projects.

The initial study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an environmental impact report (EIR), use a previously prepared EIR and supplement that EIR, or prepare a subsequent EIR to analyze the project at hand. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant impact on the environment, a negative declaration shall be prepared. For this project, the City recognizes the potential for environmental effects and is preparing a Program EIR to address the broad planning issues associated with the Update process. The General Plan Update will contain specific policies and implementation measures which address the environmental issues associated with the City's long range planning.

Environmental Check List Form

PROJECT INFORMATION

1. Project Title Comprehensive Revision and Adoption of the City of Atwater General Plan

2. Lead Agency City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

3. Lead Agency Contact Mo Khatami, Planning and Redevelopment Manager
Phone: (209) 357-6340

4. Project Location

The General Plan Study Area encompasses approximately 44.6 square miles. It includes land within the Atwater City Limits, unincorporated land within the City's Sphere of Influence, and other unincorporated areas. The general boundaries of the Study Area are State Highway 140 to the south, State Highway 59 to the east, Eucalyptus Road and the community of Winton to the north, and Stein Road and Bert Crane Road to the west (Figure 1).

5. Project Sponsor City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

6. General Plan Designation Figure 2, Existing General Plan Land Use Designations (1992)

7. Zoning As allowed in the City of Atwater Zoning Ordinance for each General Plan Land Use Designation

8. Project Description

The City of Atwater is initiating a comprehensive update of its General Plan. The most recent update of the City's General Plan took place in 1992, with an update of the Land Use, Circulation and Open Space/Conservation Elements. This occurred before the closure of Castle Air Force Base in 1995, which caused a decline in the City's population and its economic activity. The City is currently recovering, due in part to the conversion of the former base to civilian uses, which has been facilitated by a Reuse Plan prepared and adopted by the Castle Joint Powers Authority (JPA). Additionally, a new University of California (UC) campus north of the City of Merced is scheduled to open in the year 2005. Atwater will be connected to the UC campus through construction of a "university access system" that proposes the development of the Castle Parkway interchange and a four-lane expressway between State Route (SR) 99 and Bellevue Road. Construction of a new interchange is also being planned at the intersection of SR 99, Central and Westside Roads. These projects are expected to have a significant influence on future growth and development in the Atwater area. The City has concluded that the existing General Plan does not anticipate or respond to these factors, and therefore an update of the Plan is appropriate at this time.

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*City of Atwater General Plan Update
Initial Study
June 18, 1999*

TABLE 1
COMPARISON OF EXISTING GENERAL PLAN WITH PREFERRED ALTERNATIVE FOR UPDATED GENERAL PLAN

1992 LAND USE DIAGRAM					PREFERRED ALTERNATIVE					
LAND USE CATEGORY	AVERAGE DU/AC OR FAR	Total Acreage	Total Du/Ac or Building Intensity	Estimated Residential Population	Total Acreage	Total Du/Ac or Building Intensity	Estimated Residential Population	Change In Total Acreage	Change In Total Du/AC or Building Intensity	Change In Population
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Manufacturing	0.40	183.50	3,197,304.00		158.85	2,787,802.40		-24.65	-429,501.60	
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Downtown (Mixed Use)	1.50				71.05	4,842,407.00		71.05	4,842,407.00	
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Path								0.00	0.00	
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Note: Factors used to calculate dwelling units per gross acre and/or building intensity in square feet for non-residential development (FAR) are based upon an "average" of the permitted density range for residential categories and a "typical FAR" rather than a maximum FAR for non-residential development.

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Through community visioning and planning workshops, the City has developed a Preferred Alternative for its updated General Plan. The Preferred Alternative is a composite of various portions other development scenarios that were considered in developing the Study Area for the General Plan Update. The Preferred Alternative is shown in Figure 3.

The proposed land use designations under the Preferred Alternative, along with the acreages and estimated number of dwelling units permitted, are shown in Table 1. Approximately 28,547 acres are designated, which is 10,231 acres more than the existing General Plan designates. Table 1 also shows the changes under each land use designation in total acreage and dwelling units per acre or building intensity for each land use designation. The Preferred Alternative uses the same land use designations as the existing General Plan, except for three new designations:

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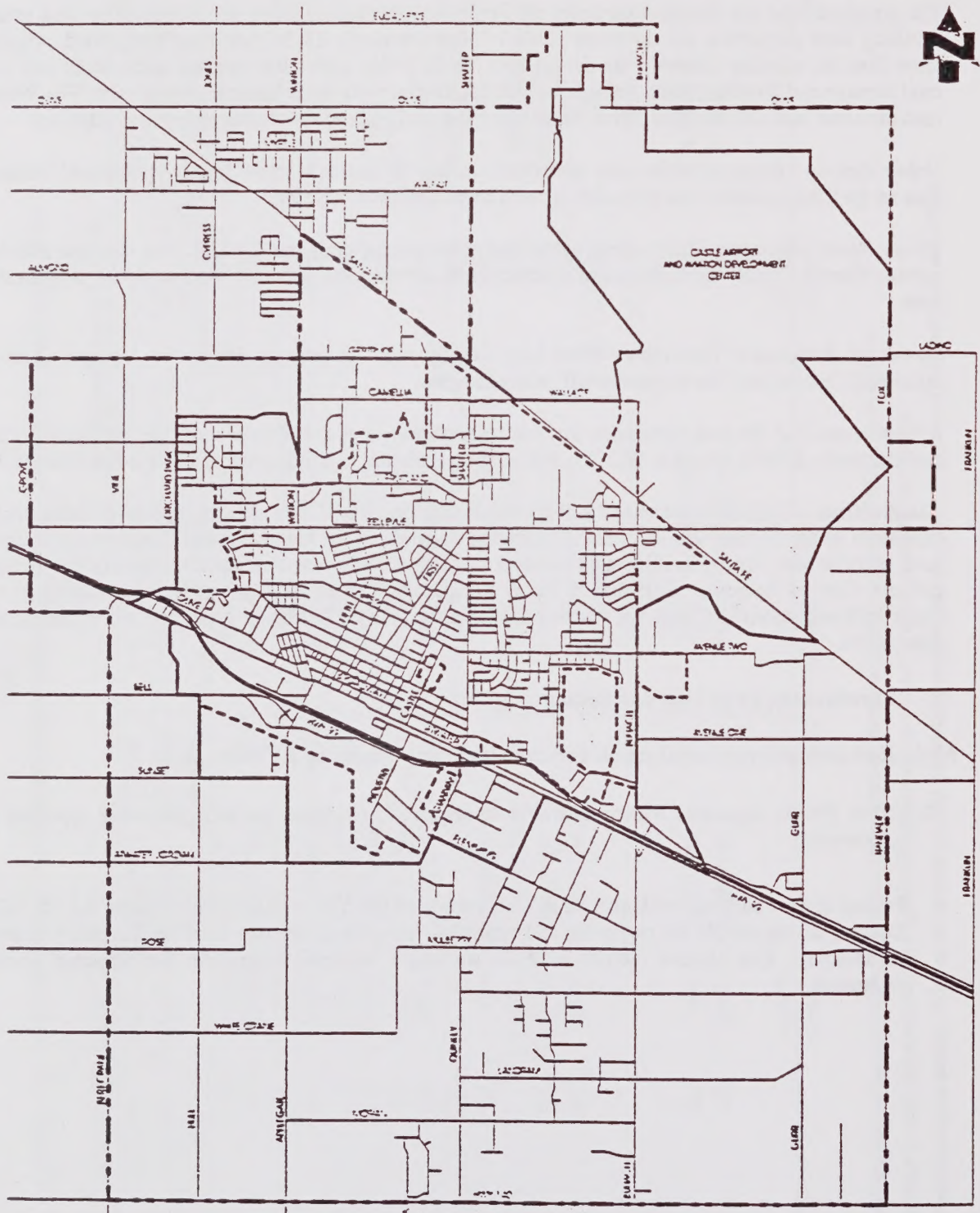
9. Surrounding Land Uses and Setting

Agriculture and rural residential are the dominant land use surrounding the Study Area.

10. Other Public Agencies whose approval is required (Includes permits, financing approval or participation agreements)

Project review and approval, as well as certification of the EIR, would be required by the City Council. The City Council is responsible for reviewing and approving the project and serves as Lead Agency under CEQA for EIR certification. The Merced County LAFCO would be required to approve the proposed Sphere of Influence expansion.

Atwater General Plan Study Area



LEGEND:

- Project Study Limits
- - - - Atwater City Limits

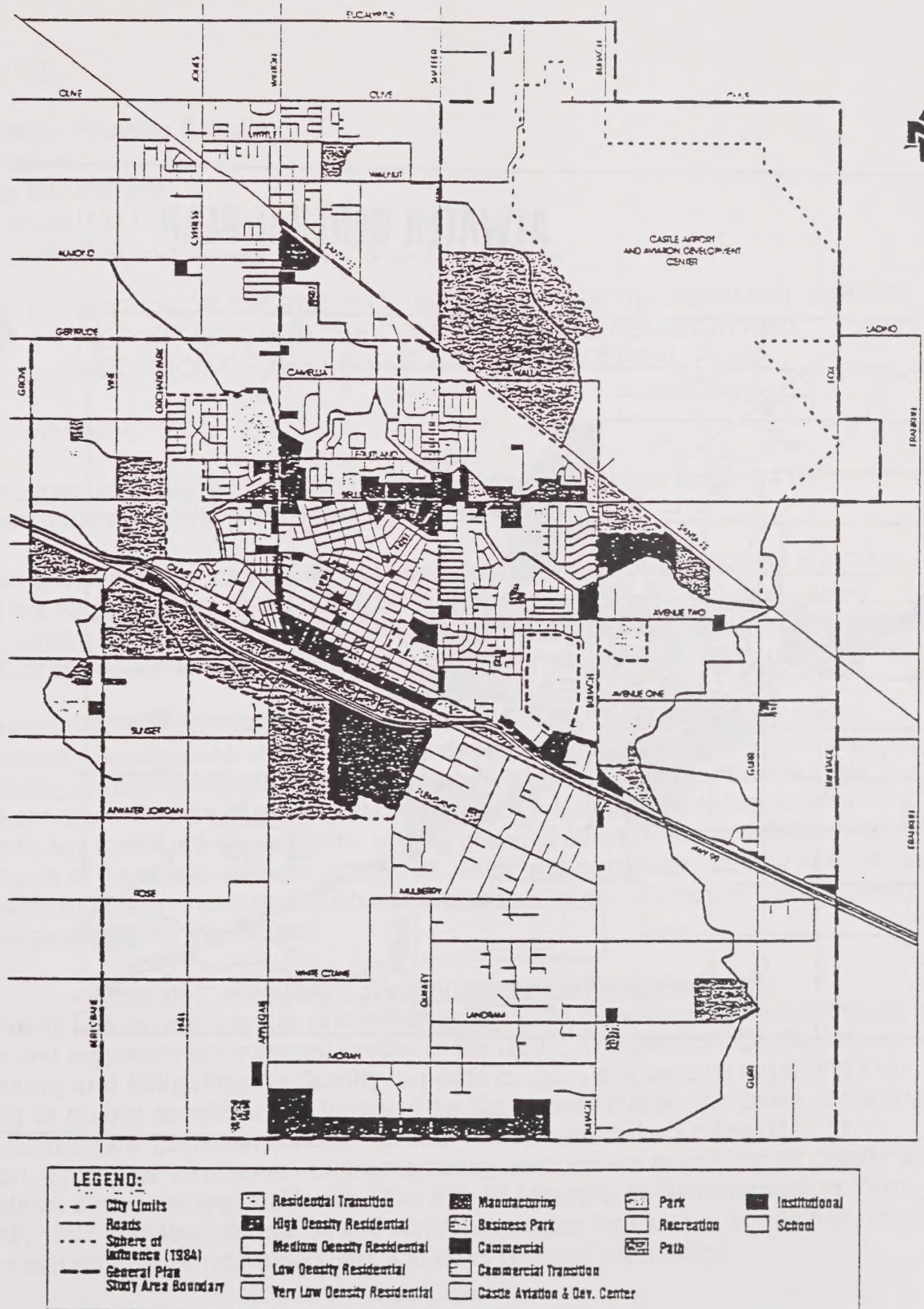
— Sphere of Influence (1984)



Castle Airport & Aviation Development Center

ATWATER GENERAL PLAN

Land Use Designations (1992)



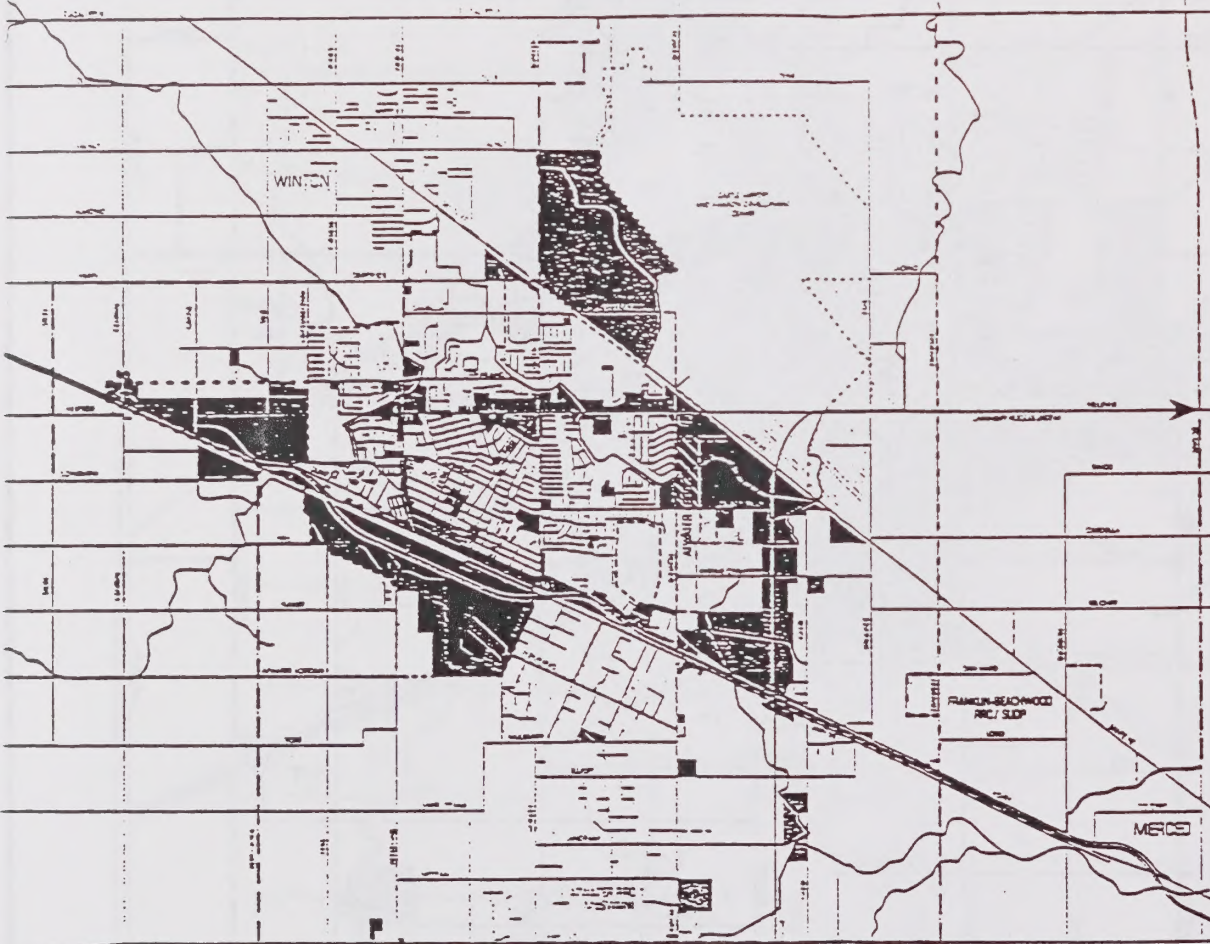
ATWATER GENERAL PLAN

Preferred Land Use Alternative



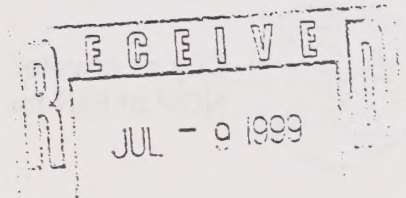
LEGEND:

- City Limits
- Roads
- Proposed Canal
- Sphere of Influence
- Proposed Sphere of Influence
- General Plan Study Area
- Proposed Interchange
- Franklin-Beachwood
- Atwater RCC No. 1
- Atwater RCC No. 2
- Downtown Residential Transition (Mixed Use)
- Residential Transition
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Manufacturing
- Business Park
- Commercial
- Commercial Transition
- Castle Airfield
- Park
- Urban Reserve
- Urban Reserve Business Park
- Path
- Institutional
- School





San Joaquin Valley
Air Pollution Control District



July 1, 1999

Mo Khatami, Planning Director
City of Atwater
Planning Department
750 Bellevue Road
Atwater, CA 95301

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT
REPORT (EIR) FOR THE COMPREHENSIVE REVISION AND
ADOPTION OF THE CITY OF ATWATER GENERAL PLAN

Dear Mr. Khatami:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the proposed project and offers the following comments:

The San Joaquin Valley's air quality has been designated nonattainment by the EPA and by the Air Resources Board (ARB) for O₃ (ozone) and PM-10 (fine particulate matter, dust). The Federal Clean Air Act (CAA) and the California Clean Air Act require areas that are designated nonattainment to reduce emissions until standards are met.

The District recommends that the air quality section of the DEIR have three main components. **Section one** should provide a description of the regulatory environment and existing air quality conditions impacting the San Joaquin Valley. **Section two** should provide estimates of existing emissions and projected pollutant emissions related to any increases in population, vehicle use, and construction activities along with an analysis of the effects of these increases. **Section three** should identify and discuss all feasible mitigation measures which, after implementation, will reduce the air quality impacts generated by this project.

Section 1: Regulatory Environment and Existing Air Quality

The District has several sources of information available to assist with the existing air quality and regulatory environment section of the DEIR. The District's **Guide for Assessing and Mitigating Air Quality Impacts** contains discussions regarding the existing air quality conditions and trends of the San Joaquin Valley Air Basin, including those pollutants of particular concern: ozone, PM-10, and carbon monoxide. In addition, it provides an overview of the regulatory environment governing air quality at the federal, state, and regional levels. The **PM-10 Attainment Demonstration Plan - May 15, 1997** contains information and control strategies for PM-10. In addition, the District can provide air monitoring data and other relevant information.

David L. Crow
Executive Director/Air Pollution Control Officer

Northern Region Office
4230 Kiernan Avenue, Suite 130
Modesto, CA 95356-9321
(209) 557-6400 • FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
2700 M Street, Suite 275
Bakersfield, CA 93301-2370
(661) 326-6900 • FAX (661) 326-6985

Section 2: Existing and Projected Emissions Levels

The growth-inducing and cumulative impacts analyses should take into consideration the existing and planned development both within the project area and in the surrounding areas. For large projects and plans, the District recommends the use of the Direct Travel Impact Model (DTIM) modeling program to calculate the ozone precursor emissions resulting from the buildout of this project. Results of a traffic study, assuming one is prepared, should be used to identify intersections and corridors requiring carbon monoxide (CO) hot spot analysis. Locations that are predicted by the local traffic model to experience high levels of traffic congestion should be modeled using the dispersion model CALINE4.

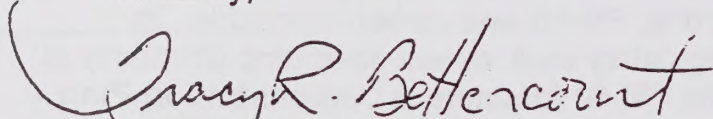
Additionally, the DEIR should quantify emissions that are individually small but cumulatively significant sources of pollution. This includes, but is not limited to, emissions from natural gas combustion for space and water heating and emissions from gas-powered lawn and garden maintenance equipment. Emission factors for these sources of pollution are available from the South Coast Air Quality Management District **CEQA Air Quality Handbook**, the Sacramento Metropolitan Air Quality Management District, and from this District.

Section 3: Mitigation Measures

Mitigation measures must be included in the DEIR that reduce the emissions of reactive organic gases (ROG), nitrogen oxides (NO_x), CO, and PM-10 to the maximum extent feasible. Site design and building construction measures that would reduce air quality impacts should be included. In addition, Transportation Control Measures (TCM) should be stressed to the maximum extent feasible. To reduce the reliance on the single occupancy vehicle and encourage the use of alternative modes of transportation thereby improving the air quality in the San Joaquin Valley, the District encourages the incorporation of pedestrian oriented development (POD) and transit oriented development (TOD) strategies into the General Plan. Specific goals, policies, and programs regarding POD and TOD can be found in the District's guidance document titled **Air Quality Guidelines for General Plans**. This document and other resource materials are available from the District upon request.

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me at (209) 557-6400.

Sincerely,



Tracy Roemer Bettencourt
Environmental Planner
Northern Region



MERCED COUNTY
FIRE DEPARTMENT

735 MARTIN LUTHER KING JR. WAY
MERCED, CALIFORNIA 95340
TELEPHONE (209) 385-7344
FAX (209) 725-0174



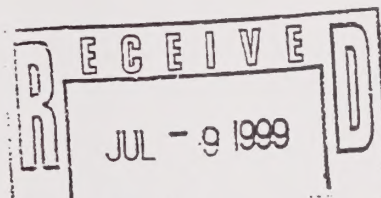
July 6, 1999

CANDACE GREGORY
Fire Chief
(209) 966-3622

STANLEY F. CRAIG
Deputy Fire Chief
(209) 966-3622

IN COOPERATION WITH THE
CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION

Mo Khatami
Planning and Redevelopment Director
City of Atwater
750 Bellevue Road
Atwater, CA 95301



Dear Mr. Khatami:

The Merced County Fire Department has reviewed the Notice of Preparation for the Comprehensive Revision and Adoption of the City of Atwater General Plan. The Fire Department has found several portions of this Plan that will significantly impact its operations and its ability to provide service in the Atwater area.

The General Plan Revision calls for large tracts of land to be converted to industrial and commercial zoning from other land use designations. This conversion will effect the County Fire Departments ability to provide service to these areas through the existing Mutual Aid Agreements between the County Fire Department and the Atwater Fire Protection District by placing increased service demands on both entities. The Environmental Impact Report should address these increased service demands and outline a strategy to mitigate them.

The Merced County Fire Department is in the process of developing plans for a fire station in the Beachwood/Franklin S.U.P.D, an area which is included within the boundaries of this study. With this in mind, it may be prudent for the County to re-examine the location of this fire station and work cooperatively with the Atwater Fire Protection District and the City of Atwater to eliminate duplication of services and maximize the level of service delivered to this growing area.

The Merced County Fire Department wishes to thank the City of Atwater for the opportunity to comment on the Notice of Preparation for the Comprehensive Revision and Adoption of the City of Atwater General Plan and looks forward to discussions with the City of Atwater and its consultants as this plan progresses.

Sincerely,

CANDACE GREGORY
Fire Chief



PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

2222 'M' STREET
MERCED, CALIFORNIA 95340
TELEPHONE (AREA CODE 209) 385-7654
FAX (209) 726-1710

ROBERT E. SMITH
Director
WILLIAM NICHOLSON
Assistant Director

April 30, 1999

Laura Webster
Pacific Municipal Consultants
1465 Myers Street
Oraville, CA 95965

RE: Review of the preliminary Atwater General Plan Maps

Dear Laura:

Thank you for providing us an opportunity to review and comment on the preliminary Atwater General Plan maps that you prepared. The following comments are provided for your consideration in the General Plan update effort:

1. Your General Plan land use map shows the area bounded by Eucalyptus to the north, Highway 59 to the east, Highway 99 to the south and Franklin to the west as "recreation". Is this area proposed to act a buffer between the future City limit lines of Merced and Atwater? If this is the case, it should be noted that this area includes the community of Franklin/ Beachwood which is a developed urban community in the County. Therefore, this area cannot be considered a buffer area. For your information ,we have supplied you a map of the Franklin/Beachwood Specific Urban Development Plan boundary.
2. Your General Plan land use map shows certain areas on the northeast part of the City designated as "Recreation", "Medium Density", and as School site. According to your map, these areas are outside of the existing and proposed Sphere of Influence and the General Plan Study area. Your map should acknowledge the Community of Winton north of the City. We would also like to direct your attention to the land use goals of the Winton Community Plan for establishing a buffer area in a form of "rural residential" designation between the urban boundaries of Winton and Atwater to maintain the identity of Winton as a separate community. A copy of the Winton Specific Urban Development Plan is provided for your information.
3. Your General Plan land use map shows areas designated as " Low Density Residential" north of Hwy 140 between Buhach and Applegate. It should be noted that the area generally bounded by HWY 140 to the south, 99 to the north, Buhach to the east and Applegate to the west is known as Atwater Rural Residential Center No.1 which is designated in the County General Plan as Agricultural Residential.

Future plans for this area should consider that the area within the Atwater Rural Residential Center No. 1 is partially developed with single family homes on one acre lots.

4. Your map shows a substantial acreage of land at the northeast corner of Santa Fe and Shaffer and south of HWY 99 between Bert Crane and Giannini as Business Park. Does the City believe that there is a demand for this vast acreage of Industrially designated land for the next 20 years based on the past or reasonably foreseeable growth trends? It should be noted that both the Cities of Merced and Livingston have also designated a vast acreage of land for industrial use and there is a lot of land available at the Castle Airport. The City should be prepared to justify the proposed supply of industrially designated land for the area.
5. Your map shows "Castle Parkway" as part of the University of California access system connecting Hwys 140 and 99 to Hwy 59 via Bellevue Road. Your plan also shows two strips of commercial designations along the Castle Parkway between HWY 99 and Avenue Two, and along Bellevue Road between Franklin and Fox Road. Traffic generated from this type of strip commercial land use pattern along a major arterial road has caused problems in other communities such as Shaw and Herndon Avenues in Fresno. It is important to ensure the utility of Castle Parkway to serve as a higher speed access to Castle and the university community/UC Merced campus is protected.
6. The land uses proposed southeast of the runway at Castle (and some of the existing land use designations north of the runway) appear in conflict with the recently adopted Merced County Airport Land Use Compatibility Plan. Please consult with Mohammad Khatami the City Planning Director in reviewing the land use compatibility map.
7. Existing General Plan designations which are "screened out" on the maps don't match the 1992 General Plan map in several areas. Have these designations been confirmed? We will reserve commenting on these designations until you can confirm what has been adopted or is proposed by the City for these areas.

Again, thank you for the opportunity to review the preliminary maps. Please give me a call if you would like to discuss these issues further.

Sincerely,



Bill Nicholson
Assistant Planning Director

BN:MK

Enclosures

P:\Atwater\gp memo\pre. map rev.mk

DEPARTMENT OF TRANSPORTATION

P.O. BOX 2048 (1976 E. CHARTER WAY)

STOCKTON, CA 95201

TDD (209) 948-7981

FAX (209) 948-7164

(209) 948-3929



July 6, 1999

10-Mer-140/59-Various
Comprehensive Revision and
Adoption of City of Atwater
General Plan
NOP of EIR
SCH #99061027

Mr. Mo Khatami
City of Atwater
Planning Department
750 Bellevue Road
Atwater, CA 95301

Dear Mr. Khatami:

Thank you for the opportunity to review the above referenced document. Transportation Planning has circulated this document through our normal interdepartmental review process. We have the following comments:

Though the project development may not be specific at this point, the proposed Comprehensive Revision of the General Plan does in fact have many potential traffic impacts. In order to adequately address the potential impacts, traffic projections should be prepared. This analysis should include the following:

- Trip generation, distribution and assignment. Documentation should include source and methodology of the data that is presented.

ADT, AM and PM peak hour volumes on all significantly affected streets and highways, including freeway ramps and crossroads, and controlling intersections. Traffic volumes should be presented for existing and future conditions, the latter for a cumulative build and no-build scenario that includes all approved developments in the area. The coverage should include all traffic that would affect the facilities evaluated and should not be limited to projects under the jurisdiction of the lead agency.

- Current and past agricultural use of the project area, and data on the types of crops grown and crop yields and values.
- The economic value of agricultural production. Economic multipliers should be used to assess the total value of the area's agricultural land uses to the local, regional and state economy. The University of California Cooperative Extension, USDA Economic Research Service and other agencies have developed multipliers for a variety of agricultural crops. In particular, the US Forest Service's IMPLAN input-output model includes multipliers for about 20 different agricultural crops grown in California.
- Type, amount, and location of farmland conversion resulting from project implementation.
- Impacts on current and feasible future agricultural operations.
- Growth inducing impacts of the project. In particular, extension of utilities or infrastructure, or discontinuous development that may have potential growth inducing impacts on surrounding agricultural lands should be discussed. One way of approaching this analysis is to examine the likely effect of full project implementation on the value of adjacent agricultural lands. Among the impacts assessed should be the likely conversion of other farmlands to urban uses, a shift to a different and less diverse mix of crops, and increased competition for water.

Other growth-inducing effects that should be addressed are those associated with the urban edge. Proposed land uses that may be incompatible with, or will result in land use conflicts with adjacent agricultural land uses at the projected urban periphery should be described.

- Incremental project impacts leading to cumulatively considerable impacts on agricultural land. These impacts would include impacts from the proposed project as well as impacts from past, current and probable future projects. A 1995 University of California study, funded by the American Farmland Trust, *Alternatives for Future Urban Growth in California's Central Valley: The Bottom Line*, offers a relevant discussion on the cumulative impacts of population growth on farmland in the Valley. The analysis of this study could be instructive for a similar type of analysis in the DEIR. Portions of this document are available on the Web at www.farmlandinfo.org (search site for California publications).

Impacts on agricultural land may also be quantified and qualified by use of established thresholds of significance (California Code of Regulations Section

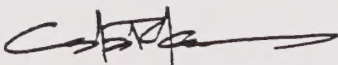
Traffic impacts should be evaluated in terms of a Level of Service (LOS) analysis that is consistent with the most recent version of the Highway Capacity Manual (HCM), or by a uniform methodology which is consistent with the HCM.

Proposed mitigation should include highway improvements and modal alternates and any proposed funding mechanisms.

- Spacing between proposed interchanges need to be addressed, as well as the need for auxiliary lanes as part of the Traffic Study.
- If growth in this area increases traffic to the level that improvement(s) are needed at State highway access point(s), these improvements should be built to State standards.
- Any work within State right of way will require an encroachment permit. Please direct the applicant to include the affected portion of the State right of way in their environmental studies. This avoids the delay of a separate environmental review for the encroachment permit. You and the applicant should review the need for cultural resource, biological resource, and hazardous waste studies in our right of way. Review agencies and interest groups frequently challenge Caltrans permits on these issues. Please provide Caltrans with either (1) appropriate studies done by qualified professional staff, or (2) the rationale for your CEQA determination that these issues are not of concern in the State right of way. This will expedite our review of the encroachment permit.
- All Final Conditions of Approval should be forwarded to Caltrans District Planning in order to monitor approved local development and implementation of agreed upon mitigation measures.

Caltrans would like to meet with City staff to discuss these issues. Please contact Debbie Hoy of my staff at (209) 948-3929, or e-mail dhoy@dot.ca.gov or cyamzon@dot.ca.gov. at your earliest convenience to set up a meeting.

Sincerely,



CARLOS R. YAMZON, Chief
Office of Travel Forecasting and
Metropolitan Planning

Cc: Ms. Mosie Boyd/State Clearinghouse/1400 Tenth St., Sacramento, CA 95814

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated on the following pages.

- | | | |
|--|--|---|
| ☐ Aesthetics | ☒ Geology and Soils | ☒ Population and Housing |
| ☒ Agricultural Resources | ☒ Hazards and Hazardous Materials | ☒ Public Services |
| ☒ Air Quality | ☒ Hydrology and Water Quality | ☐ Recreation |
| ☒ Biological Resources | ☒ Land Use and Planning | ☒ Transportation/Circulation |
| ☒ Cultural Resources | ☐ Mineral Resources | ☒ Utilities and Service Systems |
| | ☒ Noise | |
| | ☒ Mandatory Findings of Significance | |

DETERMINATION

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or is "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects:
 - 1) Have been analyzed adequately in an earlier EIR pursuant to applicable standards; and
 - 2) Have been avoided or mitigated pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.The earlier EIR adequately analyzes the proposed project, so NO ADDITIONAL ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION will be prepared.

Signature

Mo Khatami
Printed Name

Date

Planning and Redevelopment Manager
Title

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated on the following pages.

1. A brief explanation is provided in the Discussion section for all answers except "No Impact" answers that are adequately supported by the information sources cited in the question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer is explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers take account of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." Mitigation measures are described and how they reduce the effect to a less than significant level. Measures from earlier analyses may be cross-referenced.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration.
6. Where ever possible, references to information sources for potential impacts (e.g., general plans, zoning ordinances) are incorporated into the checklist. Where appropriate, a reference to the page or pages where the statement is substantiated is included. A source list is attached, and other sources used, or individuals contacted, are cited in the discussion.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) <i>Have a substantial adverse effect on a scenic vista?</i>	☐	☐	☒	☐
b) <i>Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?</i>	☐	☐	☒	☐
c) <i>Substantially degrade the existing visual character or quality of the site and its surroundings?</i>	☐	☐	☒	☐
d) <i>Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</i>	☐	☐	☒	☐

Discussion of Checklist Answers

- a) The entire Study Area is located within the San Joaquin Valley. Topography within the Study Area is relatively flat, with slight elevation changes. The Study Area is surrounded with views of the Sierra Nevada on the east, the Coast Range on the west, and the Tehachapi Mountains on the south. The introduction of urban features would permanently alter the visual character of the area. However, development within the Study Area would not obstruct views bordering mountain ranges as backdrop features. Therefore, impacts to scenic vistas are considered less than significant.
- b) As discussed in item "a", development in the Study Area would not substantially damage scenic resources (i.e. views of surrounding mountain ranges). The current General Plan has designated several routes as scenic corridors. These routes include Atwater Boulevard, First Street, Bellevue Road, Shaffer Road, Winton Way, Broadway from Winton Way to First Street, Buhach Road, Third Street, part of Grove Avenue, and all entrances to the City. City policy aims to protect and beautify these streets with specific policies regulating signs, utility lines, land use and other activities which would detract from the aesthetic value of these corridors. Also, the City encourages actions that enhance the scenic value of these corridors, such as landscaping, maintenance and architectural design. Therefore, impacts to scenic corridors are considered less than significant.
- c) Development in previously vacant lands would change the visual character of the Atwater area. Surrounding open space areas are considered a scenic resource by the City of Atwater. The introduction of urban structures in previously rural and agricultural areas would alter existing views. However, views of surrounding ranges (e.g. Coast range, Tahachapi Mountains) would remain visible as backdrop. Additional development would alter existing views, but not substantially degrade existing visual quality of the area. Therefore, impacts to visual character are considered less than significant.
- d) As urban development expands beyond the existing City limits so to does urban light and glare. With the construction of residential neighborhoods and commercial development, nighttime lighting would be introduced in previously undeveloped areas. The introduction of night lighting would alter existing nighttime views. However, the additional light sources would represent an extension of existing lighting in the Atwater area. Light sources are currently present within the current City limits to illuminate streets, neighborhoods, shopping centers, etc. New development would expand the extent of lighting in the Atwater area, similar to existing patterns. Therefore, new sources of light are not considered less than significant.

Environmental Issues

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II. AGRICULTURE RESOURCES.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- | | | | | |
|---|---|---|---|---|
| a) <i>Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</i> | ■ | □ | □ | □ |
| b) <i>Conflict with existing zoning for agricultural use, or a Williamson Act contract?</i> | □ | □ | □ | ■ |
| c) <i>Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?</i> | ■ | □ | □ | □ |

Discussion of Checklist Answers

- a) One of the principal constraints to the expansion of the City, as included in the Study Area, is the adverse impact expansion would have on prime farmlands. Atwater is predominantly surrounded by prime farmland (i.e. land which has the best combination of physical and chemical characteristics for crop production). A large parcel of land adjacent to and southwest of the City is classified as Farmland of Local Importance (i.e. land of importance to the local agricultural economy). Because Atwater is surrounded by important farmland, any growth by the City (except toward the northeast and the CAADC site) would necessarily mean the conversion of the agricultural lands. Loss of farmland through conversion is a statewide concern. Therefore, this impact is considered potentially significant.
- b) The California Land Conservation Act of 1965, better known as the Williamson Act, allows landowners to enroll their lands in a preservation program by signing contracts with participating local governments. By signing these contracts, landowners agree to restrict their lands to agricultural or open space uses. In return, local governments agree to tax the land at its use value, rather than its market value. This results in lower property taxes for the landowner. To offset some of the loss of property tax revenue, the state makes subvention payments to local governments, based on the number of Williamson Act land acreage eligible for these payments. Merced County has not chosen to participate in the Williamson Act program. Therefore, no impact relative to Williamson Act lands or zoning for agricultural use would occur.
- c) As stated in item "a" above, any growth by the City (except toward the northeast and the CAADC site) would necessarily mean the conversion of agricultural lands. Very few infill areas are available within the existing City limits. The Study Area includes residential, manufacturing and business park among other land uses. Development of these uses, as proposed, would require conversion of farmland to non-agriculture uses. Farmland conversion, has historically not been a serious problem in Merced County. However, it is a significant issue in the San Joaquin Valley and the State as a whole. Therefore, any conversion would incrementally add to the statewide conversion of farmland. As a result, the proposed conversion of farmland to non-agricultural uses in the Study Area is considered a significant impact.

City of Atwater General Plan Update
Initial Study
June 18, 1999

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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III. AIR QUALITY.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	■	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	■	☐	☐	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	■	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	■	☐	■
e) Create objectionable odors affecting a substantial number of people?	☐	■	☐	☐

Discussion of Checklist Answers

- a) The Study Area lies within the central portion of the San Joaquin Valley Air Basin (SJVAB) in Merced County. Air quality planning in the air basin is conducted by the San Joaquin Valley Air Pollution Control District (APCD). In 1991, the APCD prepared and adopted the *San Joaquin Valley Air Quality Attainment Plan* (AQAP). The AQAP contains strategies for the reduction of ozone emissions. (In 1992, the ARB postponed a decision on the Plan's ozone strategies until more information was collected.) The APCD also prepared a "PM₁₀ Nonattainment Area Plan in 1991" (PM₁₀ stands for particulate matter less than 10 microns in diameter). In 1994, the APCD approved and submitted a "Serious Area PM₁₀ Nonattainment Plan" after the Environmental Protection Agency (EPA) redesignated the SJVAB as a "serious" nonattainment area.

Increased development would incrementally add to air pollutant emissions and thereby contribute to existing non-attainment pollutant levels. This would potentially result in obstructing the implementation of existing air quality plans. Therefore, this impact is considered potentially significant.

- b) Federal and State ambient air quality standards have been established for the following six "criteria pollutants": ozone, particulate matter less than 10 microns in diameter (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂) and lead (Pb), carbon monoxide (CO). Criteria pollutants are those for which air quality standards that protect human health have been established.

The most severe air quality problem in the SJVAB is the high level of ozone. The SJVAB has been designated a "serious" nonattainment area under federal ozone standards, and a "severe" nonattainment area under state standards. The City of Atwater is currently non-attainment for ozone and PM₁₀. The SJVAB has been classified as a "serious" nonattainment area for PM₁₀ by the federal government. The air basin is also classified as being in nonattainment of state PM₁₀ standards. Atwater is not considered to be in non-attainment of carbon monoxide (CO) standards. The standards for nitrogen dioxide (NO₂), sulfur dioxide (SO₂) and lead (Pb) are being met in

*City of Atwater General Plan Update
Initial Study
June 18, 1999*

the SJVAB and the APCD does not expect that standards will be exceeded in the near future.

Development in the Study Area would increase the amount of construction, urban development and associated traffic in Merced County. Both of these factors would increase the quantity of air pollutants generated and emitted into the SJVAB that would further exacerbate existing conditions. As a result, air quality impacts resulting from development in the Study Area are considered potentially significant.

- c) In general, there are four major sources of air pollutant emissions in the SJVAB: motor vehicles, industrial plants, agricultural activities, and construction activities. Motor vehicles account for significant portions of regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

For regional pollutants such as ozone and PM_{10} , the impact of new development cannot be predicted in terms of concentrations. Instead, regional pollutants are addressed in terms of changes in the regional burden of emissions. The APCD has established interim minimum thresholds (tons/year) for three non-attainment pollutants: nitrous oxide (NO_x), reactive organic gases (ROG) and PM_{10} . The thresholds are 10 tons/year for NO_x , 10 tons/year for ROG and 15 tons/year for PM_{10} . For localized pollutants, such as CO, an increase in concentrations that would result in a predicted violation of the most stringent State or federal standards (20.0 parts per million) (ppm) for 1-hour or 9.0 ppm for 8 hours) is considered to represent a significant impact.

Air quality impacts have not been modeled as part of this Initial Study. However, given the magnitude of development proposed for the Study Area as well as exceedances of existing pollutant standards, increases in any criteria pollutant would be considered a potentially significant impact.

- d) Exposure of sensitive receptors to substantial pollutant concentrations would be determined on a project specific basis. This impact is considered potentially significant.
- e) The potential for the project to create objectionable odors affecting a substantial number of people would be determined on a project specific basis. This impact is considered potentially significant.

Environmental Issues

Potentially
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IV. BIOLOGICAL RESOURCES. Would the project:

- | | | | | |
|---|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☒ | ☐ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☒ | ☐ | ☐ | ☐ |
| c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means? | ☒ | ☐ | ☐ | ☐ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☒ | ☐ | ☐ | ☐ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ☒ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ |

Discussion of Checklist Answers

- a) A field survey and research of literature and databases was conducted for the Study Area in 1998 by May Consulting. Nineteen special status plant species and 21 special status wildlife species were identified which either exist or have the potential to exist within the Study Area. Two special status plant species, Colusa grass and succulent owl's clover, were discovered in the Study Area. In addition, five special status wildlife species-- vernal pool fairy shrimp (*Branchinecta lynchi*), Molestan blister beetle (*Lytta molesta*), western burrowing owl (*Athene cunicularia hypugea*), loggerhead shrike (*Lanius ludovicianus*), and tricolored blackbird have been observed in or near the Study Area. Due to the presence of these five species and the potential presence of the remaining 16 special status wildlife and 17 special status plant species, impacts to special status species are considered potentially significant.
- b) Sensitive habitats are natural habitats that have high biological value and/or documented scarcity in the region or state. Sensitive habitats occurring in the Study Area include vernal pools and swales, seasonal wetlands, emergent

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marsh, and riparian scrub. These habitat types have all undergone significant losses statewide since the middle of the 19th century. Because these habitats have become scarce, many of their dependent plant and wildlife species have become rare or endangered. All of the sensitive habitats in the Study Area have some potential to support special status plant or wildlife species. Additionally, these habitats or portions thereof would qualify as wetlands, as defined under Section 404 of the Clean Water Act (CWA), and would therefore, be under jurisdiction of the U.S. Army Corps of Engineers. Therefore, impacts to natural communities are considered potentially significant.

- c) The Study Area includes potential wetlands as defined by Section 404 of the CWA. Riparian habitat in the Study Area consists primarily of open to dense patches of scrub along Black Rascal and Bear Creeks. Vernal pools and swales are limited to an area east of the runways at the CAADC site. In addition to the natural vernal pools and swales, approximately 2.8 acres of vernal pools have been constructed as mitigation for impacts to vernal pools at the Federal Bureau of Prisons site. Seasonal wetlands occur predominantly within the annual grassland matrix at Castle Airport. There is also a project being undertaken by the Federal Bureau of Prisons that will result in the creation of 1.2 acres of seasonal wetlands as mitigation for impacts to seasonal wetlands at the site. Emergent marsh is present in some slow moving waterways and fringe areas of permanent water such as stock ponds, creeks, and irrigation canals. All of these areas represent potential wetland areas that could be disturbed during development of the Study Area. Therefore, impacts to wetlands are considered potentially significant.
- d) No migratory or nursery sites were discussed in previous surveys conducted in the Study Area. However, a variety of habitat types occurring in the Study Area could provide migratory corridors for wildlife. Therefore, due to the diversity of wildlife species existing or potentially occurring in the Study Area, impacts to migration corridors are considered potentially significant.
- e) Development of the study area is not anticipated to conflict with any local plans or ordinances protecting biological resources. This impact is considered less than significant.
- f) The Study Area is not located within a Habitat Conservation Plan, natural Community Conservation Plan or other approved local, regional or state habitat conservation plan. No impact is anticipated.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES. Would the project:

- | | | | | |
|--|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | ☒ | ☐ | ☐ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☒ | ☐ | ☐ | ☐ |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature? | ☒ | ☐ | ☐ | ☐ |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☒ | ☐ | ☐ | ☐ |

Discussion of Checklist Answers

- a-c) Only a small fraction of Merced County has been surveyed for archaeological or historic cultural resources. Areas containing these resources are often located near natural waterbodies and on elevated grounds. The Study Area is basically flat valley floor and does not include any unique geological features. However, according to the Castle Reuse Plan EIS, six cultural resource surveys have been conducted within a one-mile radius of the CAADC site, but only one cultural resource has been recorded. CA-MER-254H, consisting of a historic trash scatter, a chert flake and a possible mano fragment, is located north of the CAADC site on the bank of the Canal Creek.

Prior to development in the Study Area, a full records search and field survey should be conducted by a qualified archaeologist to determine the presence and extend of any historic, archaeological or paleontological resources. Until further research is conducted, impacts are considered potentially significant.

- d) At the time of European contact, the Study Area was occupied by the Northern Valley Yokuts, a linguistically and geographically distinct division of the larger Yokuts groups that lived in the San Joaquin Valley and the Sierra Nevada foothills south of the Fresno River. As many as 41,000 Yokuts may have lived in their homeland before disease and invasions by people of European descent reduced their numbers. Most areas within the study area have been disturbed to some degree, either by prior development or agricultural activities. However, the potential exists for previously unknown human remains to be uncovered during development of the Study Area. Therefore, this impact is considered potentially significant.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS. Would the project::

a) <i>Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:</i>	☐	☒	☐	☐
i) <i>Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</i>	☐	☐	☒	☐
ii) <i>Strong seismic ground shaking?</i>	☐	☐	☒	☐
iii) <i>Seismic-related ground failure, including liquefaction?</i>	☐	☒	☐	☐
iv) <i>Landslides?</i>	☐	☐	☒	☐
b) <i>Result in substantial soil erosion or the loss of topsoil?</i>	☐	☒	☐	☐
c) <i>Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?</i>	☐	☒	☐	☐
d) <i>Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?</i>	☐	☐	☒	☐
e) <i>Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?</i>	☐	☐	☐	☒

Discussion of Checklist Answers

- a) Development with the study area could potentially expose people and property to geologic hazards, specifically seismically induced liquefaction. This impact is considered potentially significant.
- i. No known faults are located in the Study Area. The nearest known fault is the Kings Canyon Lineament, approximately ten miles south of the City. Geological evidence indicates that this fault has not been historically active. The closest significant mapped faults lie about 20 miles to the northeast in the Sierra Nevada and 30 miles to the southwest in the Diablo Range. To the west are the Calaveras Fault and the San Andreas Fault, both historically active faults whose earthquakes have been felt in Merced County. The nearest Alquist-Priolo Special Studies Zone is the Ortigalita Fault Zone in southwest Merced County, about 38 miles from the City. While the Ortigalita Fault has not been active in historic times, it apparently has been active within the last 10,000 years. Because no faults cross the study area, impacts from fault rupture are considered less than significant.
- ii. The most likely seismic hazard to be experienced by the City is ground shaking, caused by earthquakes generated

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on active faults in either the Sierra Nevada or the Coast Ranges. The Castle Reuse Plan EIS states that the CAADC site is within Seismic Zone 3, as defined by the Uniform Building Code. Seismic Zone 3 is identified as likely to sustain damage due to major seismic events. All new facilities constructed are required to incorporate features to minimize damage. Compliance with building codes would reduce potential damage in the if a major seismic event were to occur. Therefore, exposure of structures to adverse effects resulting from strong seismic ground shaking are considered less than significant.

- iii. There is a possibility of a liquefaction hazard in the Study Area. Liquefaction--the complete loss of supportive strength of water-saturated sediment when it is subjected to ground shaking--is known to occur most often in uniform sandy sediments with high water tables. However, studies to ascertain the potential liquefaction hazard in the Study Area have not been conducted. Until studies are conducted to determine the possibility and extent of liquefaction, this impact is considered potentially significant.
- iv. Landslides typically occur where soils on steep slopes become saturated or where natural or manmade conditions have taken away supporting structures and vegetation. The Study Area is located on generally flat, valley floor. Given the topography of the area, potential for landslides is considered unlikely. Therefore, no impact associated with landslides would occur.
- b) A hazard not generally well known, but which has occurred in the San Joaquin Valley, is the erosion of soils due to wind. The removal of soil by wind causes several problems. Not only does it have the effect of denuding the land like water erosion, it also increases particulate matter pollution and reduces visibility. Activities by humans, such as the plowing of land, can increase the likelihood of a wind erosion hazard. The U.S. Soil Conservation Service (now known as the Natural Resource Conservation Service) has designated a majority of the Atwater General Plan Study Area as an area of severe wind erosion hazard. Urban development, as well as agricultural activities in the Study Area, could increase the hazard if proper mitigation measures are not implemented. Therefore, potential for soil erosion in the Study Area is considered potentially significant.
- c) Subsidence, the gradual settling or sinking of the earth's surface, has been a problem in Merced County, mainly in the southwestern portion. This subsidence has been caused by the withdrawal of groundwater at a rate faster than the recharge of the aquifer, a situation called "overdraft". The soils above the water table are compacted, and the surface ground level lowers. In some parts of California, subsidence of more than ten feet has occurred. Since the City sits atop a groundwater basin, it is potentially subject to subsidence if groundwater withdrawal should exceed its replacement. Therefore, development in the Study Area could potentially be subject to subsidence. This is considered a potentially significant impact.
- d) The Soil Survey of the Merced Area, conducted by the Soil Conservation Service (now the Natural Resources Conservation Service), indicates that soils in the Atwater area are of the Delhi-Atwater association. Within the City limits, there are three major soil types. Most of the City sits upon *Atwater sand, 0 to 3 percent slopes (AnA)*. There is little or no hazard of water erosion, but there is a severe hazard of wind erosion. The southeastern corner of the City is underlain by *Atwater loamy sand, 0 to 3 percent slopes (AfA)*. The water-holding capacity of this soil is moderate. The hazard of wind erosion is moderate. In the northeast portion of the City, the predominant soil is *Atwater loamy sand, deep over hardpan, 0 to 3 percent (AgA)*. This soil is similar to the AfA soil, except that it is underlain by an iron-silica cemented hardpan at a depth of 3.5 to 5.5 feet. The parent material was granitic alluvium, and the soil was deposited by either wind or water over the older hardpan soil. Scattered throughout the City are pockets of *Atwater loamy sand, imperfectly drained variant, 0 to 3 percent slopes (AkA)*. This imperfectly drained soils occupies slight depressions that range from 5 to 30 acres in size and lie within areas of well-drained Atwater soils. Also present within the City limits is *Atwater loamy sand, deep over hardpan, poorly drained variant, 0 to 1 percent slopes (AdA)*. This soil rests on hardpan at a depth of 3.5 to 5 feet and has naturally poor drainage.

Soils similar to those described above are found throughout the Study Area. Along Canal Creek, southeast of the CAADC site, lies *Greenfield sandy loam, deep over hardpan, 0 to 3 percent slopes (GfA)*. This is a well-drained soil with moderate permeability and little or no hazard of erosion. The McSwain area and other portions of the Study Area south of the City have *Greenfield sandy loam, deep over hardpan, poorly drained variant, 0 to 1 percent slopes (GeA)*. GeA soils generally develop in depressions where irrigation water and rain water accumulate. Other soils scattered throughout the southern part of the Study Area include:

Dinuba sandy loam, 0 to 1 percent slopes (DpA) - A moderately deep soil, with moderate permeability through the upper soil layers, but slow in the substratum. Imperfect drainage, slow surface runoff, and no erosion hazard.

Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent (DrA) - Similar to the Dinuba sandy loam, except that the surface soil is slightly calcareous in spots and has brown or brownish-black organic strains due to the effects of alkaline salts.

Dinuba sandy loam, poorly drained variant, moderately saline-alkali, 0 to 1 percent slopes (DtA) - Similar to Dinuba sandy loam, except that the water table is closer to the surface, making the soil moist for most of the year. Salt crusts are found in numerous locations.

Hilmar loamy sand, slightly saline-alkali, 0 to 3 percent slopes (HhA) - This soil is moderately deep. Permeability is very rapid in the surface soil, but slow to very slow in the subsoil. Surface runoff is very slow. There is no hazard of water erosion, but a moderate hazard of wind erosion. The soil is slightly saline-alkali, with the salts generally in the subsoil.

Snelling sandy loam, imperfectly drained variant, 0 to 1 percent slopes (SmA) - A well-drained soil with rapid permeability in the surface soil and moderate permeability in the subsoil. Surface runoff is slow. There is little erosion hazard except for a slight danger of wind movement. The soil in the Study Area is affected slightly by a high water table, resulting from irrigation and impeded drainage. In places, sand has been added to the surface by wind.

None of the soil profiles indicate instability or expansiveness. Therefore, impacts relative to creating substantial risk to life or property in association with expansive soils are considered less than significant.

- e) No septic tanks are proposed in the Study Area. The City provides sewage disposal and treatment. Improvements to existing systems would be required to accommodate new construction. Therefore, no impact to soils relative to supporting use of septic tanks would occur.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

a) <i>Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?</i>	☐	☐	☒	☐
b) <i>Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</i>	☐	☐	☒	☐
c) <i>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?</i>	☐	☐	☒	☐
d) <i>Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code ' 65962.5 and, as a result, would it create a significant hazard to the public or the environment?</i>	☐	☐	☐	☒
e) <i>For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?</i>	☐	☐	☐	☒
f) <i>For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</i>	☐	☐	☐	☒
g) <i>Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?</i>	☐	☐	☐	☒
h) <i>Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</i>	☐	☐	☐	☒

Discussion of Checklist Answers

- a) The uses proposed in the Study Area include potential expansion of the Castle Airport and new industrial and manufacturing operations. These uses would require routine transport, use and disposal of hazardous materials. Therefore, hazards to the public or environment through transport, use or disposal of hazardous materials is considered potentially significant.
- b) The Merced County Health Department has a list of Atwater businesses that are state-regulated hazardous waste generators. There are 77 businesses that are listed, with 18 of them located in the unincorporated area. The most frequently listed businesses are service stations, automobile repair shops, medical facilities and offices, manufacturing firms and food processors. Uses proposed in the Study Area could add to existing potential hazards within the Atwater area. Therefore, potential impacts from upset or accident conditions involving release

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of hazardous materials into the environment is considered potentially significant.

- c) The Atwater Elementary School District and Merced Union High School District have a total 13 schools distributed throughout the Atwater area. A new elementary schools is proposed for a 10-acre parcel north of Juniper Avenue and within the current Bellevue Elementary School attendance boundary. In addition, anew high school is proposed near the intersection of Buhach Road and Avenue Two southeast of the City. No uses that could potentially emit hazardous emissions or handle hazardous or acutely hazardous materials, substances of waste would be allowed within one-quarter mile of existing or proposed school facilities. Therefore, hazardous impacts to schools would be considered less than significant.
- d) The California Department of Toxic Substances Control maintains the Hazardous Waste Information System, that keeps record of hazardous waste generators in the state. Facilities with an EPA identification number are on file in this system. Sixteen sites with Atwater addresses are listed in the state records. However, some of these sites are actually located outside the City limits.

The CAADC site has been a place of particular concern for hazardous materials and waste. Past operations at Castle Air Force Base had commonly utilized aviation and motor fuels, motor oils and lubricants, hydraulic fluids, clean solvents, pesticides, paints and thinners. As of February 1995, 209 sites with soil contamination were identified for environmental remediation, of which 161 will require little or no action. In addition, there were 33 Installation Restoration Program sites at the former Castle Air Force Base. The Department of Defense will be responsible for cleanup of these sites. Because hazardous materials sites are located in the Study Area, impacts to the public would be considered potentially significant until these sites are remediated.

- e-f) The City obtained access to the former Castle Air Force Base after it was closed in September 1995. It is now called CAADC. The aviation portion of the site is now being operated as a general aviation airport for civilian use. A Feasibility Study/Master Plan has been prepared for the airport that proposed reuse of the airfield as a civil airport specializing in aviation-related manufacture and repair. The airport may also serve air passenger and commuter traffic in the larger Atwater/Merced area.

The Study Area incorporates CAADC in its land uses. Land uses surrounding the CAADC are anticipated to be compatible with airport uses. Therefore, development in the Study Area would not result in a safety hazard for people residing or working near the CAADC. Impacts are considered less than significant.

- g) Responsibility for day-to-day emergency response falls to the Atwater Police and Fire Departments, which are first responders in emergency situations. Under more extreme general emergency conditions, other City departments become involved, along with state, County and private agencies as needed. Response procedures are described in the City of Atwater Emergency Plan, date November 1984. (The Emergency Plan is in the process of being updated.) The City of Atwater Emergency Plan outlines the responsibilities for the management of hazardous material incidents.

For incidents that occur on roadways, the on-scene management responsibility rests with the primary traffic investigative authority. Incidents taking place at locations other than roadways, such a industrial plants, will be managed by the City's Fire Department. All City agencies will support and assist the appropriate agency in charge of response. The Chief of Police will develop a hazardous materials incident response plan supported by other agencies.

When evacuation is determined to be necessary, the most expedient routes would be identified by emergency officials. The populace would be notified and provided with information on evacuation routes. Additional transportation would be mobilized, and traffic control and direction would be provided as necessary. Development of the Study Area is not anticipated to impair emergency plans or evacuation. Therefore, impacts are considered less than significant.

- h) In Merced County, grass and brush lands are the most likely places for wildand fires. Since the study area lies outside these areas, the risk of wildland fire is low. Therefore exposure of people structures to a significant risk of loss, injury or death involving wildland fires is considered less than significant.

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Environmental Issues

Potentially
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No
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VIII. HYDROLOGY AND WATER QUALITY. Would the project:

a) Violate any water quality standards or water discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☒	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	☒	☐	☐	☐
j) Inundation by seiche, tsunami or mudflow?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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IX. LAND USE AND PLANNING. Would the project:

- | | | | | |
|---|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| a) <i>Physically divide an established community?</i> | ☒ | ☐ | ☐ | ☐ |
| b) <i>Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</i> | ☐ | ☐ | ☐ | ☒ |
| c) <i>Conflict with any applicable habitat conservation plan or natural community conservation plan?</i> | ☐ | ☐ | ☐ | ☒ |

Discussion of Checklist Answers

- a) Under the existing City limits, the majority of the City is located north of SH 99. The proposed General Plan Study Area includes significant lands south of SH 99. Growth in this direction would not divide the community but rather expand it south of an existing feature (i.e. SH 99). Of greater concern than dividing an established community is the potential for loss of identity of an existing community. Expansion of the City's Sphere of Influence would include the community of Winton and the Buhach and McSwain Rural Residential Centers. Winton is an urbanized area, and the McSwain center is developing into a large residential area. Expansion of the SOI to the north would potentially result in a loss of identity for the community of Winton. This would be considered a potentially significant impact.
- b) Approximately 86 percent of the land in the Study Area is devoted to agricultural uses. One of the principal constraints to the expansion of the City is the adverse impact expansion would have on prime farmlands. As urbanization moves out into agricultural areas, urban/rural compatibility conflicts sometimes occur. Residential development in rural areas is often located adjacent to or near agricultural lands to take advantage of open space values. New residents may be subject to impacts from agricultural operations that adversely affect the enjoyment of their property, including noise, dust, chemical fertilizers and pesticides. In turn, these agricultural activities may face pressure to modify, curtail or cease the operations that generate the nuisances to adjoining residences. This is considered a significant impact.
- c) The lands included in the General Plan Study Area are not within a habitat conservation plan or a natural community conservation plan. No impact would occur.

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Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☐ | ☒ |

Discussion of Checklist Answers

- a) The State Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to prepare a geological inventory of selected important mineral commodities within a defined study Region. For areas classified as having mineral resources, the State Mining and Geology Board may designate all or part of these areas as having mineral resources of "statewide" or "regional significance." The State Division of Mines and Geology is in the process of preparing a mineral land classification map for Merced County. However, the map is not scheduled to be released until the late summer or early fall of 1999. Thus, no state-designated mineral resource areas currently exist in Merced County. Therefore, no loss of mineral resource recovery sites would occur as a result of the proposed project.
- b) The Merced County General Plan identified two active mining sites located southwest of Atwater near SH 140. Although the product mined at the sites is not explicitly stated, the County's General Plan mentions that a sand deposit is located in the vicinity of Atwater. No other mining activity has been identified in or near the Study Area. Therefore, implementation of the project is not anticipated to result in the loss of a locally important mineral resource recovery site.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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XI. NOISE. Would the project

a) <i>Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?</i>	☐	☒		☐
b) <i>Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</i>	☐	☒	☐	☐
c) <i>A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</i>	☐	☒	☐	☐
d) <i>A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</i>	☐	☒	☐	☐
e) <i>For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?</i>	☐	☒	☐	☐
f) <i>For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</i>	☐	☒	☐	☐

Discussion of Checklist Answers

- a) Noise sources in the Study Area currently include traffic on SH 99, operations on the Union Pacific and Burlington Northern (UP&BN) and Santa Fe Railroads, aircraft operations at the Castle Airport, commercial and industrial activities, active recreation areas of parks, and outdoor play areas of schools. The most pervasive of these noise sources is SH 99 and the railroads, but the other noise sources also contribute to the ambient noise environment on a more localized basis. The residential neighborhoods in the central part of the City are considerably quieter than the areas near SH 99 or the railroads, and are affected mainly by local traffic.

Development of the proposed Study Area would result in increased noise levels resulting from construction of the proposed land uses (e.g. business park, manufacturing, etc.). Based on the magnitude and types of development, people could potentially be exposed to noise levels in excess of standards established in the local noise ordinance. Therefore, this impact is considered potentially significant.

- b) Groundborne vibration in the Study Area would generally be associated with railroad traffic. Railroad noise levels were modeled for distances to existing and projected future railroad contours. Contour distances were based on a mean sound exposure level of 103 dB at a reference distance of 100 feet, and a uniform distribution of trains throughout the daytime and nighttime hours. Based on the modeling, uses as close as 184 feet would experience noise levels of 70 dB L_{dn} diminishing to 60 dB L_{dn} at a distance of 856 feet. Land uses proposed near the railroad may experience some degree of groundborne vibration. Therefore, impacts related to groundborne vibration are considered potentially significant.

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- c) Development of the proposed land uses (refer to Table 1) would increase the overall ambient noise levels in the Study Area. Previously undeveloped areas would be urbanized which would result in permanent increases in noise levels above existing ambient levels. Therefore, the potential for a substantial permanent increase in ambient noise levels in the Study Area above existing levels is considered significant.
- d) As stated in item "c", development of the Study Area would result in increased noise levels. Temporary increases would occur in association with construction activities. In addition, expansion of existing uses, such as the Castle Airport, would result in periodic increases in ambient noise levels associated with increased air traffic. Therefore, impacts resulting from temporary and periodic increases in noise levels in the Study Area are considered potentially significant.
- e) Castle Airport is located immediately northeast of the City of Atwater. The conversion of the airfield from military to civilian use has resulted in a significant change in the characteristics of the noise generated at Castle. Noise exposure contours have been developed which show that the noise impact area for the airport would be located to the north and east of Santa Fe Drive. Although the City of Atwater would apparently not be located within the noise impact area, it is probable that aircraft overflights of the City will occur more frequently as the number of daily operations at the airport increase over time. Therefore, noise impacts to surrounding land uses resulting from Castle Airport may be potentially significant.
- f) Castle Airport is located within the larger CAADC. The Atwater City Council has adopted a Reuse Plan for the CAADC that provides for a variety of land uses and indicates the locations where these uses would be allowed. Nine land use designations, including Airport and Airport Related, Correctional Facility, Business Park, Medical, Educational Commercial Recreation, Visitor Commercial, Commercial, Commercial Recreation and Open Space are identified in the General Plan Preferred Alternative. Due to the proximity of these uses to the airstrip, persons working at or in the vicinity of the CAADC may be exposed to excessive noise levels. This impact is considered potentially significant.

Environmental Issues

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XII. POPULATION AND HOUSING. Would the project:

- | | | | | |
|---|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? | ☒ | ☐ | ☐ | ☐ |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

Discussion of Checklist Answers

- a) From 1995 to 1998, the population of Atwater declined. This decline is attributed to the closure of Castle Airforce Base and the loss of base personnel. However, there are several factors which would indicated that the decline in population would be reversed. First, the reuse of Castle Air force Base could stimulate the local economy and may attract more workers and residents, although the *Environmental Impact Statement for the Disposal and Reuse of Castle Air Force Base* (1994) concluded that population levels would not increase beyond preclosure levels. Second, the opening of the future University of California campus near the City of Merced may have spillover effect, as students and employees seek housing. Third, the relatively low housing prices in Merced County will become more attractive to prospective homeowners. Finally the Central Valley as a whole, and especially the San Joaquin Valley, is projected to experience higher than average population growth, as more business, workers and commuters move into the region. Therefore, impacts to population growth are considered potentially significant.
- b) The proposed project would expand the City's existing SOI and provide more opportunities for housing. The vacancy rate in the City in 1998 was estimated to be 14.50%, which is almost twice the Merced County vacancy rate of 7.53% and the state rate of 7.39%. The closure of Castle Air Force Base has had a significant impact as there is not no base personnel to generate a demand for housing. Another possible explanation for the high vacancy rate is that much of the currently unused off base housing is located within the City. While the current vacancy rate in the City is high, the figure does represent a decline from the 1997 vacancy rate of 14.92%. Some of the increase in vacancies may have been offset by housing demand by workers at the commercial and industrial activities established at the CAADC site. The Preferred Alternative proposes an additional 23,285 housing units to be constructed in the Study Area. No displacement of a substantial number of existing housing necessitating construction of replacement housing is anticipated. Therefore, no impact is anticipated relative to displacement and replacement housing.
- c) As stated in item b above, the proposed project would potentially create the opportunity for more housing construction. No displacement of people necessitating the construction of replacement housing is anticipated.

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Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIII. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

a) Fire protection?	☐	☒	☐	☐
b) Police protection?	☐	☒	☐	☐
c) Schools?	☐	☒	☐	☐
d) Parks?	☐	☒	☐	☐
e) Other public facilities?	☐	☒	☐	☐

Discussion of Checklist Answers

- a) Fire protection services in the City are provided by the Atwater Fire Department (AFD). Fire protection services in the unincorporated areas are provided by the Merced County Fire Department. The AFD also provides fire protection service to the CAADC site under a contract with the Castle Joint Powers Authority (JPA). The 1992 Atwater General Plan anticipated that a maximum of two more fire stations would be sufficient to serve the entire Study Area, and it identified five alternative sites. As part of the Annexation Feasibility Study for the CAADC, the Department estimated that an additional 15 fire fighters would be required to provide adequate service to CAADC. Also, while existing equipment on the site would be useable, the Department indicates that it would have to be eventually replaced. New equipment would include a new engine, a heavy rescue vehicle, a command vehicle and a support vehicle. Additional firefighters and equipment will gradually be added in the future as development and revenues increase. Until this occurs, impacts are considered potentially significant.
- b) Police protection services within the City of Atwater are provided by the Atwater Police Department. Within the unincorporated portion of the Study Area, services are provided by the Merced County Sheriff's Department. At the CAADC site, with one exception, security services are provided by a private security force employed by the JPA under a caretaker agreement with the Air Force. The Department anticipates that revenue generated from property taxes within the CAADC site will offset the initial costs of providing law enforcement services. Additional officers and equipment will gradually be added in the future as development and revenues increase. Until this occurs, impacts are considered potentially significant.
- c) The Atwater District's 1998 Facilities Master Plan indicates that the total enrollment is currently below overall facility capacity. However, the number of students in the Atwater District is expected to increase, based on the projected increase in housing construction. Using a model that incorporated conservative assumptions about growth, the Facilities Master Plan forecasted a total student enrollment of 5,404 by the year 2005. Based on these projections, the number of K-6 students would exceed current capacity by 567, and the number of 7-8

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students would exceed capacity by 92. Moreover, under a state budgetary policy, class sizes in the first to third grades are encouraged to be reduced to a student/teacher ratio no greater than 20:1. This program may be expanded to other grades in the near future, which would place even grater demands on school facilities.

Within the Study Area, high school education is provided by the Merced Union High School District. The District's enrollment is predicted to grow from its current 8,829 to a range from 10,073 to 10,933 by 2007. Based on these projections, both the present and future high school facilities in the Atwater area will either barely accommodate the forecasted student population or will not have adequate capacity. Both Districts currently charge developer fees to offset impacts to schools. These fees, as well as state bonds for school construction, would be used to constructed additional school facilities. Because additional facilities would be needed to accommodate student projections in the Study Area, this impact s considered potentially significant.

- d) There are 18 parks (77.62 park acres) within the Atwater City limits. This breaks down to approximately 3.37 park acres per 1,000 population. This is below the ratios recommended in the National Recreation and Parks Association (NRPA) guidelines. The NRPA advises each jurisdiction to establish its own standards that are tailored to the unique characteristics of the area, rather than to adopt the guidelines verbatim. As community development proceeds, informal recreational spaces such as streets and vacant lots will become increasingly scarce. In addition to public recreation spaces, there will be a need to provide adequate on-site recreational space as part of proposed housing developments, particularly in multi-family developments. Therefore, the project would increase the use of existing neighborhood and regional parks as well as the need for addition park acreage to maintain existing park acreage ratios. Atwater's park acreage per person is currently below NRPA standards. Therefore, this impact is considered potentially significant.
- e) There is one library within the City limits: the Atwater Branch of the Merced County Library, located on Third Street. This facility is part of the Merced County Library system. Service at the Atwater Branch has been reduced in recent years due to budget cutbacks. A library loan program has been eliminated, and reference services have been reduced. Population growth in the Study Area would increase demand for library services. No plans or any major changes in service are in place at this point. Therefore, impacts to library services are considered potentially significant.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION.				
a) <i>Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</i>	☐	☐	☒	☐
b) <i>Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?</i>	☐	☐	☐	☒

Discussion of Checklist Answers

- a) There are 18 parks (77.62 park acres) within the Atwater City limits. This breaks down to approximately 3.37 park acres per 1,000 population. This is below the ratios recommended in the National Recreation and Parks Association (NRPA) guidelines. However, the NRPA advises each jurisdiction to establish its own standards that are tailored to the unique characteristics of the area, rather than to adopt the guidelines verbatim. An additional 214.65 acres of parks and 123 acres of recreation land uses are proposed for the Study Area for a total of approximately 338 acres. Based on the projected increase in residential population of 69,855 and the park and recreation land use acreage, park acreage in the Study Area would be approximately 4.8 acres per 1,000 residents. This represents an increase in acreage per 1,000 population over existing levels.

In the short-term, usage of existing neighborhood and regional parks or other recreational facilities may increase. However, because the Study Area includes park and recreation land uses, impacts to existing facilities are anticipated to be less than significant.

- b) The Study Area includes approximately 338 acres of park and recreation land uses. The impacts of these facilities have not been determined. Prior to development, these facilities would require environmental review. Until a thorough assessment of the potential impacts for each proposed park or recreation use is determined, impacts resulting from development of these facilities would be considered potentially significant.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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XV. TRANSPORTATION/TRAFFIC. Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☒	☐	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

Discussion of Checklist Answers

- a) The City of Atwater's transportation system is composed of one State Route and numerous County and City routes. The City's highway network consists of State Route (SR) 99. Prominent City roadways include Atwater Boulevard, Bellevue Road, Winton Way, Applegate Road, Buhach Road, Broadway, Shaffer Road, First Street and Third Street. Outside the City limits, State Highway 140 forms the southern boundary of the Study Area, and State Highway 59 forms part of the Study Area's eastern boundary. Santa Fe Drive, a northwest-southeast route between Merced and Winton, passes northeast of the City by the CAADC site.

As population and commerce increases in the Study Area, so to will the volume of traffic. The increase in traffic may be substantial in relation to the existing traffic load and capacity of the street system in the Study Area. Population in the Atwater/Merced area is anticipated to increase, meaning a larger number of vehicles will be using the local roads. Also, the new UC campus and continued reuse of the former Castle Air Force Base will place additional demands on the roadway system. Therefore, increases in traffic compared to existing levels is considered potentially significant.

- b) The City of Atwater has conducted an analysis of level of service (LOS) along several segments of roadway as well as SR 99. The analysis was prepared to determine if acceptable levels of service currently exist along the City's highways, streets and roads network. Traffic volumes used to develop LOS calculations were obtained from the Merced County Association of Governments (MCAG), the City of Atwater and various local agencies. For purposes of this analysis, a minimum LOS of D (with A being best and F being worst) was assumed along

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Results of the segment analysis indicate that street and highway segments within the City of Atwater are currently operating at LOS A through F. One segment, SR 99 between Buhach and Shaffer, is operating at LOS F. Thus, this highway segment falls short of City of Atwater's, Caltrans', and other affected local agencies' minimum LOS standards. Severe prolonged congestion, LOS E, is not encountered along any roadway segments included in the analysis. Moderate traffic congestion (LOS D) occurs at one location, Atwater Boulevard between Winton and Shaffer. Based upon this assessment, it can be further assumed that intersections located along the street segments identified are operating at LOS D or better. In addition, freeway ramps connecting to the deficient segment along SR 99 are likely operating at deficient levels of service (LOS E or F). Since further development as proposed in Study Area would increase traffic volumes and potentially lower LOS below the City's minimum standard, impacts to LOS are considered potentially significant.

- c) The City obtained access to the former Castle Air Force Base after it was closed in September 1995. It is now called the Castle Airport and Aviation Development Center (CAADC). The CAADC site contains an 11,800 foot runway, one of the longest in California. The aviation portion of the site is now being operated as a general aviation airport for civilian use. The City of Atwater, along with Merced County and the City of Merced, have formed a Joint Powers Agency (JPA) to explore the different uses for this site. The vast space of this airport is conducive to the reuse of the facilities.

A Feasibility Study/Master Plan has been prepared for the airport. The Master Plan proposes the reuse of the airfield as a civil airport specializing in aviation-related manufacture and repair. Should growth continue in the Atwater/Merced area, the airport may serve air passenger and commuter traffic. According to the Negative Declaration prepared for the Castle Airport in 1995, some or all of the aircraft that are based at other airports in the region are expected to relocate to Castle Airport, possibly up to 103 aircraft in the first year of operations. The federal EIS stated that the Atwater Municipal Airport would likely close with the reuse of the Castle airfield, which it subsequently did. It also mentioned that the Merced and Turlock airports may close under the Commercial Aviation Alternative, which was not the preferred alternative in the EIS. However, the Castle Airport Negative Declaration stated that the Merced Municipal Airport is expected to continue to provide air service to the region for the immediate future.

Both the Master Plan and Negative Declaration for Castle Airport indicate potential for increased air traffic within the Study Area. Therefore, changes in air traffic patterns, including increased traffic levels, are considered potentially significant.

- d) There are several at-grade railroad crossings along existing streets and roads within the City of Atwater. Each of these crossings is controlled by crossing equipment maintained by the affected railroad. Intersection control equipment and/or signage is maintained by the City of Atwater and/or County of Merced. During development of the future circulation system in the Study Area, each existing rail crossing will be reviewed to determine if and when grade separation is warranted based upon safety and capacity analysis.

The agricultural economy of the County depends on safe and efficient goods movement. Primary generators of truck traffic in the City are agricultural and industrial uses. The County is responsible for maintaining an extensive network of low volume farm-to-market roads in sparsely settled areas to service the agricultural industry. Since agriculture is a relatively mature industry in the City, overall truck traffic generated by agricultural uses should remain stable in the future. However, relocation and replacement of individual agricultural processing plants and other new industries can significantly alter both regional and localized patterns and concentrations of truck traffic within City's SOL. As healthy industrial growth is expected within the City, the scale of industrial-related truck traffic will continue to increase. Future roadway networks within the Study Area have not yet been designed. However, development of the future roadway system should take into consideration rail crossings, agricultural equipment and trucking. Until roadway plans are formulated, hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) are considered potentially significant.

- e) When evacuation is determined to be necessary, the most expedient routes would be identified by emergency officials. The populace would be notified and provided with information on evacuation routes. Additional

transportation would be mobilized, and traffic control and direction would be provided as necessary. A more detailed discussion of emergency response and circulation are provided in Section VII, Hazards and Hazardous Materials, Item g.

- f) Land uses proposed in the Study Area include manufacturing, business park and commercial. Each of these uses would require parking substantial amounts of new parking to accommodate employees, patrons, vehicles delivering raw materials and finished products to and from the Study Area. Each project would be required to provide parking in accordance City standards for parking based on land use. Therefore, impacts to parking are considered less than significant.
- g) The City of Atwater is a part of the public transit system called Merced County Transit, also known as The Bus. The Bus is Merced County's only countywide provider of public transit service. The Bus provides basic public transportation service to seventeen cities and communities in Merced County, including Atwater. Two bus routes serve the City. Both routes stop in Merced and Winton, and one route continues on to Livingston. Connections can be made to other Merced County communities. The City also provides a dial-a-ride paratransit service.

Bicycles are not currently considered a major mode of travel in the City. However, with the onset of air quality attainment strategies and congestion management, bicycling is considered an effective alternative mode of transportation that can help to improve air quality and reduce the number of vehicles traveling along congested facilities. The City of Atwater is in the process of adopting a Regional Bike Plan. New development in the Study Area is anticipated to encourage use of public transportation and biking to work. Both transit and bike routes would have to be expanded to accommodate new development. Given the onset of air quality attainment strategies and congestion management, alternative transportation is anticipated to expand throughout the Study Area. Therefore, this impact is considered less than significant.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) <i>Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</i>	☐	☒	☐	☐
b) <i>Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</i>	☐	☒	☐	☐
c) <i>Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</i>	☐	☒	☐	☐
d) <i>Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</i>	☐	☒	☐	☐
e) <i>Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?</i>	☐	☒	☐	☐
f) <i>Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?</i>	☐	☐	☐	☒
g) <i>Comply with federal, state and local statutes and regulations related to solid waste?</i>	☐	☐	☐	☒

Discussion of Checklist Answers

- a) The City provides sewage disposal and treatment using a pipeline system, pump stations and a wastewater treatment plant (WWTP) that serves Atwater, Winton and the CAADC site. The treatment plant, located south of Highway 99, handles an average daily flow of 3.0 million gallons per day (MGD). Based on the Atwater Operations and Maintenance manual, the design average dry weather treatment capacity for the treatment plant is 6.0 MGD. The wet weather design hydraulic capacity of the plant is 12.0 MGD, with a regulation restriction of 10.0 MGD. Effluent from the plant is discharged to the Atwater Drain, a tributary to Bear Creek, which flows to the San Joaquin River.

The RWQCB has noted that there are numerous locations where the sewer lines are broken or are subject to root intrusion. In addition, the plant operator of the Atwater WWTP has identified some recurring problems including primary clarifier restrictions, influent flow surges and odors.

Additional development would increase wastewater flows and subsequent demands on the WWTP. Atwater can continue to provide sewage disposal and treatment for development. However improvements to accommodate new construction must be planned, designed and constructed. Until facilities are upgraded and expanded, new development could potentially over-tax existing systems and result in exceedances of wastewater treatment requirements. Therefore, impacts to wastewater are considered potentially significant.

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- b) Currently, the City does not have a Sewer Master Plan. However, the City has plans to construct wastewater facilities or renovate existing facilities to make the plant more efficient. In terms of water facilities, the City is in the process of completing a Water System Master Plan that will facilitate long range planning. The City uses groundwater treated with chlorine to supply residents. The proposed annexation of Castle would require more wells and connections into the existing City infrastructure. Similarly, further growth in the Study Area would necessitate development of new water supplies and delivery systems. The location and extent of new water and wastewater facilities have not been identified. However, expansion of facilities could result in environmental impacts. Any renovation or construction of new facilities would be subject to environmental review. Therefore, until environmental review is conducted, potential impacts resulting from expansion of water and wastewater facilities are considered potentially significant.
- c) The City's storm drainage system generally consists of retention basins and detention basins with a discharge to a natural drain or Merced Irrigation District (MID) canal. Atwater can continue to provide storm drainage for development. However, each development will need to develop its own storm drainage system, the type and extent of which to be determined on a case-by-case basis. The systems will generally be retention basins or detention basins with a positive discharge. Atwater will be limited by the amount of discharge into the Atwater Drain and MID facilities. The CAADC site will be limited by the amount that can be discharged into Canal Creek. The City currently does not have an updated Storm Drain Master Plan. Since development in the Study Area is anticipated to require construction of new storm water drainage facilities, potential construction impacts are considered potentially significant.
- d) The City obtains water for domestic use from a system consisting of groundwater wells and a one million-gallon elevated tank that is used for peaking storage and fire flows. Residents and businesses in the unincorporated areas obtain their domestic water from either private wells or small water companies.

There are ten operating wells used by the City. An additional well (#10) is used only on a standby basis because of the presence of dibromochloropropane (DBCP) and EDB in the water. The City estimates that the operating wells have a total production capacity of 17,600 gallons per minute (gpm). In 1997, the wells produced a total of approximately 2.66 billion gallons of water to satisfy demands within the City. On average, 5,067 gpm of water were pumped per day.

Growth occurring in the Study Area would require the drilling of more wells and expanding the existing conveyance infrastructure. Therefore, impacts to water supplies are considered potentially significant.

- e) As described in item "a" above, the Atwater WWTP is currently dealing with a variety of problems, but is capable of servicing existing development in the City. Development proposed in the Study Area would increase wastewater flows and subsequent demands on the WWTP. To accommodate additional wastewater flow generated in the Study Area, renovation expansion of existing facilities, as well as new construction of new facilities may be required. Therefore, impacts to wastewater treatment are considered potentially significant.
- f) The City generated approximately 23,570.87 tons of solid waste in 1990. Solid waste in the City is collected by a private contractor, Browning Ferris Industries. The waste is transported and disposed in the Merced County Landfill off State Highway 59. It was previously estimated that the landfill would reach capacity by 1995. The County had plans to expand the landfill by 200 acres, which would extend its useful life another 19 years. In addition, the City has adopted a Source Reduction and Recycling Element (SRRE) which aims to reduce and divert solid waste from the landfill. Therefore, impacts to solid waste disposal are considered less than significant.
- g) In 1989, the state enacted the California Integrated Waste Management Act. Under this Act, local jurisdictions are required to divert 25 percent of their solid waste from disposal by 1995 and 50 percent by 2000. After analyzing the Act, Merced County and the incorporated cities within the County decided to use the Solid Waste Joint Powers Agreement to address compliance with the Act. The Solid Waste Advisory Board (SWAB), authorized by the Agreement and having legal authority over solid waste issues, concluded that the most efficient and cost-effective method to complete the mandatory elements was to utilize a countywide approach. The SWAB designated the Merced County Public Works Department as the lead agency in preparing and developing the SRRE for all of Merced County. Each city, however, maintains ultimate control over their SRREs and must

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individually adopt their own plans by resolution.

As of 1990, the City was diverting 4 percent of its waste. To meet the mandated state goals, the City adopted a SRRE. Implementation of the components of the City's SRRE has been slow. In part, this has been because the City is participating in a regional approach to meeting the state's waste reduction goals, an approach that has received the state's approval. Land Uses in the Study Area would comply with the SRRE. Therefore, no impact would occur relative to compliance with regulations related to solid waste.

Environmental Issues	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII MANDATORY FINDINGS OF SIGNIFICANCE				
a) <i>Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?</i>	☐	☒	☐	☐
b) <i>Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.</i>	☐	☒	☐	☐
c) <i>Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?</i>	☐	☒	☐	☐

Discussion of Checklist Answers

- a) Development of the Study Area could potentially degrade the quality of the environment by adversely impacting special status plant and wildlife species. Development activities could potentially harm or remove sensitive habitat communities currently occurring in the Study Area. In addition, development in the project area could potentially harm previously unknown cultural resources potentially occurring in the Study Area. Refer to discussions in Sections IV. Biological Resources and V. Cultural Resources.
- b) Development in the Study Area would incrementally and cumulatively add to existing impacts on agricultural lands, air quality, biological resources, public services, traffic, storm water drainage systems, water supplies and wastewater treatment. Each of these issues were discussed in Sections II. Agriculture Resources, III. Air Quality, IV. Biological Resources, VIII. Hydrology and Water Quality, XI. Noise, XV. Transportation/Traffic and XVI. Utilities and Service Systems.
- c) Development in the Study Area includes uses that could potentially involve the use and transport of hazardous materials. In addition, increase noise and air pollution could result in negative affects on people. These issues are discussed in Sections VII. Hazards and Hazardous Materials, XI. Noise and III. Air Quality.

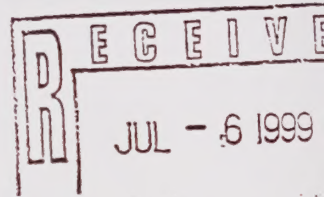
REFERENCES AND CONTACTS

Pacific Municipal Consultants. 1998 (November). Due Diligence Working Paper for the City of Atwater General Plan Update.

McSwain Union Elementary School District

926 North Scott Road
Merced, CA 95340

(209) 723-7877



June 25, 1999

Mr. Mo Khatami, Director
City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

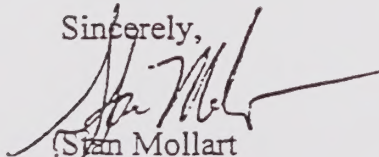
Dear Mr. Khatami,

In response to your "*Notice of Preparation of an Environmental Impact Report*" issued June 4th, 1999, the McSwain Union Elementary School District wishes to submit for consideration the following items for inclusion in the EIR.

- McSwain school district presently holds title to a fifteen-acre site on Buhach and Moran, and is in the process of obtaining the adjacent 25 acres from Merced County. Current planning calls for construction of a school /park facility on this property.
- At full buildout of the preferred alternative to the Atwater General Plan, the McSwain Union School District would be called upon to provide educational services for an additional 746 students. This number is based on the student generation rates as calculated in our most recent "Development Fee Justification Study" prepared by Michael Paoli & Associates (June 1999)
- In order to provide such services the Atwater General Plan should designate a 20 acre school site for the construction of a new campus, preferably in a residential zone, away from commercial and industrial sites.
- The General Plan should insure ease of access for school pupil transportation via school bus, including adequate driving lanes and appropriate loading zones for pupils.

If you have any questions or need any additional information please do not hesitate to call.

Sincerely,

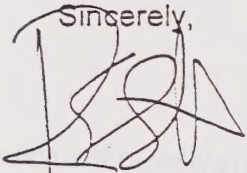


Stan Mollart
Superintendent

1. What are the City's overall growth and development goals? How do they relate to the region and other plans, such as the City of Merced's recently adopted General Plan, and the County's current collaboration with the University of California to plan a community to complement the future 10th UC Merced.
2. What are the City's expectations for County land use policies around the City? The City's proposed General Plan would affect several unincorporated SUDPs, Winton, Castle, and Franklin-Beachwood, as well as the County's designated Rural Residential Centers along Buhach Road and in the McSwain area.
3. The City should clarify its intentions concerning proposed land use and development in between Atwater and the City of Merced. The Merced City General Plan designates an "Area of Interest" with a stated desire to retain agricultural uses. What is Atwater's policy for this area, both north and south of Santa Fe Drive?

Thank you for the opportunity to comment on this NOP. I look forward to extensive discussions in the future with you, your staff, and your consultant to resolve these questions so that the County can look forward to a successful and complimentary relationship between the City's updated General Plan and the General Plan of Merced County.

Sincerely,



Robert E. Smith
Planning and Community Development Director

RES/ar

cc: Board of Supervisors
County Counsel
County Administrator

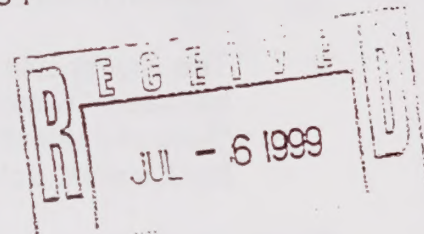


PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

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ROBERT E. SMITH
Director
WILLIAM NICHOLS
Assistant Director

June 30, 1999



Mo Khatami
Planning and Redevelopment Director
City of Atwater
750 Bellevue Road
Atwater, CA 95301

Dear Mr. Khatami:

The Merced County Planning and Community Development Department has reviewed the Notice of Preparation (NOP) for the Comprehensive Revision and Adoption of the City of Atwater General Plan which we received on June 7, 1999. The preferred Land Use Alternative Map which was distributed with the NOP illustrates the significant urban expansion of the City to the north around the Castle Airport Aviation and Development Center, the northwest in the vicinity of the J.R. Wood food processing facility, and to the southeast along the proposed Castle Parkway. This substantial urban expansion of the City will result in the conversion of significant quantities of agricultural lands to urban uses and could result in conflicts with established agricultural operations such as the J.R. Wood food processing facility. The County requests that the City examine the significant impacts to agriculture resulting from its expansion and to mitigate those impacts to a level of insignificance. Mitigation techniques might include the inclusion of a comprehensive annexation and growth management strategy as part of the General Plan and the use of conservation easements to offset the loss of agricultural lands at the time of conversion. My staff would be happy to discuss these and other mitigation techniques with you and your consultant, should you desire.

The General Plan preferred land use scenario map also designates significant new commercial and business park areas. The development of these areas will generate significant traffic both within the City as well as to the unincorporated areas surrounding the City. The County requests that the City adopt a facility impact fee or other mechanism to fully mitigate the impact of traffic to County roadways. I would suggest we meet with County Public Works Department Staff to discuss this issue further.

In addition to the rather broad environmental concerns that I have raised in response to this NOP, the preferred land use alternative diagram raises numerous questions to the County which will require further discussions between the City and the County before the County can assess the relationship of the City's proposed General Plan to County land use and development policies. Though there is, of course, no legal requirement that the City and the County General Plans be consistent, the relationship of these plans will directly affect future City/County annexation negotiations. To prepare for these future discussions, I suggest that the City focus on the following general questions so that the County can begin to understand the basis for the preferred land use alternative.

farmland systematically and strategically rather than on a case-by-case basis. Transfer of development credits, mitigation banking, and economic incentives for continuing agricultural uses, are other strategies appropriate at the general plan level.

Thank you for the opportunity to comment on the NOP. If you have questions about the above comments, or require technical assistance or information, please contact the Division at 801 K Street, MS 13-71, Sacramento, CA 95814; phone (916) 324-0850.

Sincerely,



Jason Marshall
Assistant Director

Enclosure

cc: John Amodio, Chief
Division of Land Resource Protection

15064.7). The Division has developed a California version of the USDA Land Evaluation and Site Assessment (LESA) Model, a semi-quantitative rating system for helping to establish the environmental significance of a project's impact on farmland. The model may also be used to rate the relative value of alternative project sites. The LESA Model is available from the Division at the contact listed below.

Also, the Division's 1990 publication, *The Impacts of Farmland Conversion in California*, contains a good discussion of the kinds of physical, social and economic impacts that can occur as a result of farmland conversion. This publication could be helpful in addressing the farmland impacts of future development in the City of Atwater. This publication is available through the Division.

Mitigation Measures and Alternatives

Feasible mitigation measures and alternatives to lessen farmland conversion impacts should be discussed in the DEIR. The Division has compiled an annotated list of approximately 30 "conservation tools" which have been used to conserve or mitigate impacts on agricultural land. The unpublished report may be requested from the Division. Examples of some of the tools included in the report follow.

- Direct urban growth to lower quality soils in order to avoid valuable agricultural lands.
- Increase home density or cluster residential units to allow a greater portion of the development area to remain in agricultural production.
- Encourage redevelopment and urban in-fill projects that favor existing urban infrastructure over the development of farmland.
- "Replace" converted farmland by protecting other farmland via the use of long-term development restrictions. One instrument for implementing this strategy is the perpetual agricultural land conservation easement [e.g., Department of Conservation's Agricultural Land Stewardship Program (Public Resources Code Section 10200-10277)].
- Establish buffers such as setbacks, berms, greenbelts, and open space areas to separate farmland from urban uses.
- Implement a right-to-farm ordinance.

Such mitigation measures are most effective when implemented at the broad policy level of the general plan. This high level of approach would address the loss of

DEPARTMENT OF CONSERVATION

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July 6, 1999

Mo Khatami
City of Atwater, Planning Department
750 Bellevue Road
Atwater, CA 95301

Subject: Notice of Preparation (NOP) for the City of Atwater GP Revision - SCH #99061027

Dear Mo Khatami:

The Department of Conservation's Division of Land Resource Protection (Division) has reviewed the referenced NOP. The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other land conservation programs. We offer the following comments for your consideration.

The NOP proposes to update the City of Atwater's General Plan. With the new University of California campus scheduled to open in 2005, the proposed construction of the "university access system", and the projected population growth in Atwater and other Central Valley communities, the potential for significant cumulative adverse impacts on agricultural lands is high. We recommend that the DEIR address this issue, as well as the projects direct and growth inducing impacts. We offer the following suggestions for the kind of information that we feel should be included in the DEIR for a complete coverage of project impacts on agricultural land.

Prime Farmland, Farmland of Statewide Importance or Unique Farmland

Agricultural productivity is determined to a large extent by soil quality. The Division's Important Farmland Series maps, which are based on soil types, irrigation status and use, show that the project will affect large areas of the highest category of farmland, Prime Farmland. We recommend that the DEIR include an excerpt of the Division's Merced County Important Farmland Series map that identifies areas of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland in the project area. (Maps are available from the Division at the below address using the order form enclosed, or via the website at <www.consrv.ca.gov>.) The DEIR should also include the following information.

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